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A Discussion on the Pathogenesis and Current Treatment of Vitiligo of the Qi and Blood Deficiency Type Based on the Theory of Qi and Blood Disharmony

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Abstract: ***Vitiligo, a refractory skin disease, is closely related to the Traditional Chinese Medicine (TCM) theory of qi and blood. Based on the theory of qi and blood disharmony, this study systematically explores the pathogenetic characteristics and treatment strategies for vitiligo of the qi and blood deficiency type. The study found that qi and blood deficiency is a key pathological link in the progression of qi and blood disharmony and is significantly correlated with the progression of vitiligo lesions. Through a combination of literature analysis and clinical observation, it was confirmed that interventions targeting the stage of qi and blood deficiency can effectively halt disease progression. Modern pharmacological research further reveals that traditional Chinese medicines that tonify qi and nourish blood exert therapeutic effects by regulating melanocyte function. This study provides new evidence for the TCM pattern differentiation of vitiligo and lays a theoretical foundation for the development of treatment regimens targeting the regulation of qi and blood.***

Keywords: Vitiligo, Disharmony of qi and blood, Deficiency of qi and blood, Etiology and pathogenesis, Traditional Chinese medicine treatment, Syndrome differentiation and treatment.

1. Introduction

Vitiligo is a common acquired depigmenting skin disease with a global prevalence of approximately 0. 5%–2% [1]. Skin lesions primarily affect the head and face; in severe cases, they alter a patient's appearance, leading to significant social barriers and psychological distress. Current research indicates that the onset of vitiligo is closely associated with factors such as autoimmunity and oxidative stress; however, the specific mechanisms remain unclear [2]. Clinical treatment primarily involves topical corticosteroids, calcineurin inhibitors, and 308-nm excimer laser therapy. Although these approaches can control the condition to some extent, they are limited by high recurrence rates, inconsistent efficacy, and significant long-term side effects, making it difficult to achieve lasting repigmentation. Traditional Chinese Medicine (TCM) offers the advantages of multi-target and holistic regulation in treating this condition, with the theory of "disharmony of qi and blood" serving as a key basis for diagnosis and treatment [3]. However, current TCM research tends to emphasize liver stagnation and kidney deficiency while downplaying qi and blood deficiency, and to prioritize external treatments over internal regulation; research on the theory of qi and blood remains insufficiently systematic and in-depth. Based on the theory of disharmony of qi and blood, this paper systematically reviews the pathogenesis and current treatment status of vitiligo caused by deficiency of qi and blood, clarifies the hierarchical relationship between disharmony of qi and blood and deficiency of qi and blood, conducts an in-depth analysis of the core pathogenesis, and summarizes clinical characteristics and treatment principles. It aims to provide a theoretical basis for clinical diagnosis and treatment and to enrich the TCM syndrome differentiation and treatment system.

2. Origins and Connotations of the Theory of Qi and Blood Disharmony

2.1 Historical Origins of the Theory of Qi and Blood Disharmony

Disharmony of Qi and Blood refers to an abnormal state in the generation, circulation, and functional coordination of Qi and Blood. It encompasses a wide range of pathological changes, including Qi deficiency, Blood deficiency, deficiency of both Qi and Blood, Qi stagnation and Blood stasis, and disordered Qi and Blood, and its scope is broadly inclusive. The theory of Qi and Blood Disharmony originated from the core proposition in the "Huangdi Neijing": "When Qi and Blood are out of harmony, a hundred diseases arise and transform," establishing the view that the imbalance of Qi and Blood constitutes the fundamental pathogenesis of disease [4]. The relationship between qi and blood can be summarized as follows: "Qi is the commander of blood, and blood is the mother of qi; qi generates, circulates, and retains blood, while blood carries and nourishes qi. The two work in harmony to sustain the body's physiological functions." Master of Traditional Chinese Medicine Yan Dexin pointed out that "Qi is the source of all diseases, and blood is the origin of all diseases," and that "chronic illness inevitably involves blood stasis." The smooth flow of qi and blood is of paramount importance; when they are out of harmony, all manner of diseases arise, thereby laying the theoretical foundation for the treatment of difficult and complex conditions based on the theory of qi and blood [5].

2.2 The Theory of Imbalance in Qi and Blood and Its Physiological and Pathological Relationship with the Skin

At the physiological and pathological levels of the skin, the harmony of the Ying and Wei is the fundamental guarantee for maintaining its functions. The Ying circulates within the vessels, while the Wei circulates outside them; the Qi and Blood of the Ying and Wei nourish the face from within and reach the muscle surface from the outside, imparting luster and color to the skin. When the Nutritive and Defensive Qi are out of harmony, the pores become porous; pathogenic wind takes advantage of this vulnerability to invade the body, leading to disharmony of Qi and Blood and a lack of nourishment to the skin, resulting in the development of vitiligo. Deficiency of Qi and Blood in the internal organs is the root cause of the disease, while disharmony of the Nutritive and Defensive Qi at the skin surface is the manifestation of the disease; the two are interrelated and mutually causative.

3. Pathogenesis and Treatment Principles of Vitiligo Due to Deficiency of Qi and Blood

3.1 Pathogenesis of Vitiligo Due to Deficiency of Qi and Blood

The disharmony of qi and blood represents the broad pathogenesis, encompassing pathological changes such as deficiency of qi and blood, qi stagnation, and blood stasis. Deficiency of qi and blood is a specific syndrome pattern characterized by an insufficiency of both qi and blood; the two are in a relationship of inclusion and being included. In the development of vitiligo, the disharmony of qi and blood persists throughout the entire process, while deficiency of qi and blood is most commonly observed during the stable phase, resulting from prolonged illness and depletion; this constitutes the core element of "disease caused by deficiency." The core pathogenesis of vitiligo falls under the category of "disease caused by deficiency," arising from factors such as congenital insufficiency, dietary imbalance, emotional distress, and external wind-pathogen injury, which lead to disharmony between qi and blood and subsequently trigger the disease [7]. The transformation of its pathogenesis occurs in stages: during the progressive phase, the condition is characterized by "deficiency at the root and excess at the branch," with wind-pathogen and blood stasis being prominent; during the stable phase, deficiency predominates, with liver and kidney deficiency being particularly pronounced. Modern research provides scientific explanations for the theory of qi and blood disharmony from the perspectives of microcirculatory disorders, oxidative stress, and immune dysregulation. Deficiency of qi and blood can lead to insufficient local microcirculatory perfusion in the skin, elevated levels of oxidative stress, and impaired melanocyte function [8]. Pathological changes such as abnormal T-lymphocyte activation [9] and microcirculatory disorders [10] are intrinsically linked to the TCM theory of "disharmony of qi and blood."

The core pathogenesis of vitiligo caused by deficiency of qi and blood lies in an insufficiency of congenital endowment or acquired malnutrition, which leads to a lack of sources for the generation of qi and blood. Deficiency of qi results in an inability to solidly defend against external pathogens and a lack of propulsive force, while deficiency of blood causes the skin and tissues to lose their nourishment, giving rise to wind and dryness. Wind-pathogens then take advantage of this vulnerability to invade the body, ultimately leading to the formation of white patches. Master of Traditional Chinese Medicine Qin Guowei proposed treating this disease based on the theory of the Nutritive and Defensive Qi and Blood, providing an important framework for diagnosis and treatment focused on qi and blood [11]. Common TCM patterns of vitiligo include Liver Qi Stagnation, Liver-Kidney Deficiency, Qi and Blood Stasis, and Qi and Blood Deficiency. Among these, the Qi and Blood Deficiency pattern is characterized by pale or powdery-white patches with blurred borders that develop slowly and commonly appear on the face, neck, and trunk; Systemic symptoms may include a sallow or pale complexion, fatigue and weakness, shortness of breath and reluctance to speak, a pale, swollen tongue with tooth marks, a thin white coating, and a fine, weak or deep, fine, and weak pulse [12]. This pattern is commonly seen during the stable phase of the disease, with a relatively long course, and is often accompanied by chronic wasting diseases; it results from prolonged illness depleting qi and blood, leading to inadequate nourishment of the skin [13].

3.1.1 The Root of the Disease: Insufficient Sources of Qi and Blood, Leading to Inability to Generate and Transform

The development of qi and blood deficiency stems from both congenital insufficiency and acquired malnutrition. The root of congenital constitution lies in the kidneys; when kidney essence is deficient, essence cannot be transformed into blood, leading to a lack of sources for the generation of qi and blood and a failure to nourish the skin—this constitutes the fundamental cause of vitiligo [14]. Among acquired factors, irregular diet damages the spleen and stomach, leading to insufficient generation of qi and blood; excessive fatigue depletes qi and blood; and emotional distress causes stagnation of qi, which, over time, transforms into fire that injures yin and depletes blood [3]. As the body's largest organ, the skin covers the entire body and is externally connected to the hair and fur; its color and appearance directly reflect the state of qi and blood, making it highly sensitive to changes in qi and blood [15]. Melanocytes are located in the basal layer of the epidermis and have a relatively long metabolic cycle; their function depends on continuous nourishment from qi and blood, making them particularly sensitive to qi and blood deficiency. Although the skin is widely affected in a state of qi and blood deficiency, melanocytes—due to their unique metabolic cycle and functional dependence—are the first to exhibit depigmentation. This is the key distinction between vitiligo and other diseases. Modern research indicates that deficiency of qi and blood can lead to insufficient local microcirculatory perfusion in the skin, elevated levels of oxidative stress, and impaired melanocyte function [16]. Deficiency of qi results in a lack of propulsive force, leading to impaired blood circulation and malnutrition of the local skin; deficiency of blood prevents proper nourishment, causing the skin to become withered. Ultimately, deficiency of qi and blood leads to malnutrition of the skin, impaired melanin production, loss of pigmentation, and the formation of white patches.

3.1.2 Manifestations of the Disease: Malnutrition of the Skin, Stagnation of Qi and Blood

Deficiency of qi and blood leading to malnutrition of the skin in vitiligo is a direct consequence. The skin, as the body's largest organ, is permeated by meridians and is highly sensitive to changes in qi and blood; the metabolic cycle of melanocytes is approximately 28 days, requiring adequate nourishment from qi and blood to maintain tyrosinase activity and melanin synthesis, making them particularly sensitive to deficiency of qi and blood [17]. Qi deficiency fails to propel the flow, leading to impaired blood circulation and local skin malnutrition; blood deficiency fails to nourish the skin, causing it to wither and lose pigment. The "Outline of Diseases Associated with the Five Colors" in "Diagnosis by Observation According to the Classics" states: "A pale or faint color indicates deficiency." Congenital insufficiency or excessive depletion leads to deficiency of the liver and kidneys, resulting in insufficiency of essence and blood; when the skin and muscles are not nourished by the overflow of blood, white patches may appear. The spleen and stomach are the foundation of acquired constitution; weakness of the spleen and stomach leads to qi deficiency and blood insufficiency, which can also cause the skin and muscles to become undernourished and result in loss of pigmentation.

Stagnation of qi and blood constitutes an independent pathological mechanism that progresses in tandem with the malnutrition of the skin. The pathological chain begins with deficiency of qi and blood, leading to malnutrition of the skin, which in turn affects local metabolism, and ultimately results in stagnation of qi and blood and the formation of white patches. Ye Tianshi, in "Clinical Guidelines for Medical Case Studies", points out: "Initially, the disease resides in the meridians; prolonged pain penetrates the collaterals, for the meridians govern qi and the collaterals govern blood." Wang Qingren, in "Corrections in Medical Literature", states: "Vitiligo is caused by blood stasis within the skin." When qi fails to propel blood, blood stagnates within the skin, eventually forming stasis. Hang Xiaohan et al. believe that the pathogenesis of vitiligo lies in the skin region being affected by pathogenic factors due to deficiency, leading to stagnation of qi and blood in the meridians and resulting in malnutrition of the skin; this stagnation of qi and blood further leads to deficiency of the collaterals and failure to nourish the tissues, creating a vicious cycle [18]. Histopathological examination reveals that in active-phase lesions, the density of melanocytes is reduced, melanocytes at the margins are abnormally enlarged, and there is lymphocytic infiltration in the lower epidermis and superficial dermis; in late-stage depigmented lesions, melanocytes in the basal layer of the epidermis disappear, and Melan-A immunohistochemistry is negative—a manifestation of stasis resulting from impaired blood circulation [19].

3.1.3 Pathological Changes: Blood Dryness Generates Wind, Compromising the Defensive Function of the Exterior

Prolonged blood deficiency depletes the source for the generation of body fluids; with insufficient blood and deficient fluids, the blood becomes dry and loses its moisture. Once blood dryness is established, the skin and muscles lose their nourishment and become dry and withered; the pores become unstable, and the protective function of the Wei Qi weakens. Wind-pathogen takes advantage of this vulnerability to invade, disrupting the local Qi and blood, causing dysfunction in the opening and closing of the pores, trapping pathogenic factors that cannot be expelled, and leading to the spread of vitiligo patches. The "Treatise on the Origins and Symptoms of Various Diseases: Symptoms of Vitiligo" states: "Vitiligo… is also caused by wind pathogens assaulting the skin and disharmony between blood and qi. Wind pathogens are light and ascend, often damaging the upper part of the body and the skin surface; therefore, vitiligo typically first appears on the head, face, and upper limbs, gradually spreading throughout the body [20]." "Internal wind is inseparable from the liver." Stagnation of liver qi or deficiency of liver blood—where blood deficiency gives rise to wind—and both blood stasis and deficiency fail to nourish the capillaries, meridians, and the skin's surface, which can lead to the whitening of the skin and hair [21]. Deficiency of both qi and blood is the root cause of susceptibility to wind; wind-pathogen can serve as both an external factor arising from deficiency of the body's vital energy and an internal pathogenic factor resulting from blood deficiency. In summary, the pathogenesis of vitiligo characterized by deficiency of qi and blood follows a progressive pattern of "root—manifestation—transformation": the lack of sources for the generation of qi and blood is the root; the malnourishment of the skin and stagnation of qi and blood are the manifestations; and dryness of the blood giving rise to wind is the transformation. These three factors interact with one another, ultimately leading to the formation of white patches. These three factors interact with one another, ultimately leading to the formation of white patches.

3.2 Treatment Principles for Vitiligo of the Qi and Blood Deficiency Type

For vitiligo caused by deficiency of qi and blood, the fundamental treatment should focus on tonifying qi and nourishing blood, supplemented by methods to regulate qi and harmonize blood. Tu Fuhan [7] points out that disharmony between qi and blood is the key pathogenic factor in vitiligo. During the stable phase, this primarily manifests as "deficiency" due to liver and kidney deficiency and "stasis" caused by blood stasis obstructing the meridians. Treatment should therefore focus on tonifying the liver and kidneys and promoting blood circulation to unblock the meridians, supplemented by nourishing the blood and dispelling wind. Based on this, three major treatment principles have been established: tonifying qi and nourishing blood, invigorating blood and dispelling wind, and harmonizing the ying and wei. In the progressive stage, the condition is often caused by impaired spleen-stomach transformation and transport or liver qi stagnation, leading to impaired qi circulation; treatment should address both the root and the symptoms, combining the tonification of qi and blood with the dispelling of wind and invigoration of blood. In the stable stage, the focus is on tonifying deficiency, emphasizing the tonification of qi, nourishment of blood, and replenishment of essence to strengthen the foundation of acquired vitality. Duan Kexin et al. summarized Professor Xun Guowei's clinical experience, emphasizing treatment based on the theory of the Nutritive and Defensive Qi and Blood to achieve harmony between the Nutritive and Defensive Qi and unimpeded circulation of Qi and Blood. The theory that "to treat wind, one must first treat the blood; when the blood flows, the wind will subside" holds that deficiency of Qi and Blood makes one susceptible to wind

pathogens, and impaired blood circulation hinders the recovery of vitiligo; therefore, nourishing and invigorating the blood is key to treating vitiligo.

3.2.1 Tonifying Qi and Nourishing Blood to Address Deficiency

The liver governs the free flow and smooth regulation of qi, while the kidneys govern storage to maintain physiological functions. The two share a common origin in essence and blood, and their functions of storage and discharge complement each other, jointly regulating the circulation of qi and blood throughout the zang-fu organs. The liver stores blood to nourish the body and the sensory orifices, while the kidneys store essence. "When essence is not dissipated, it returns to the liver and is transformed into pure blood" (Zhang's Comprehensive Treatise on Medicine: Various Conditions Involving Bleeding). Through the mutual nourishment and regulation of yin and yang, the skin and tissues are properly nourished and kept supple. If the liver and kidneys are deficient, essence is depleted and blood is not retained; qi fails to circulate freely; water fails to nourish wood; qi and blood become disordered; or internal wind may be triggered. As a result, the skin loses its nourishment, and vitiligo develops. Physicians of the Wen School of Dermatology and Surgery believe that the deficiency of qi and blood caused by liver and kidney yin deficiency is the root cause of vitiligo. They combine prepared rehmannia root (Zhi Shou Wu) with tribulus (Wu Ji Li) to tonify the liver and kidneys without causing stagnation [22]. Master of Traditional Chinese Medicine Qin Guowei achieved significant efficacy in treating vitiligo by modifying the Er Zhi Wan formula to tonify the liver and kidneys. Clinically, he commonly uses herbs such as Ligustrum fruit, Eclipta prostrata, Dodder seed, mulberry fruit, black sesame, and goji berries to nourish qi and blood [11]. Research by Zhao Jingxia et al. has confirmed that the method of tonifying the liver and kidneys has a positive regulatory effect on the tyrosinase activity of melanocytes. Therefore, treatment should prioritize tonifying the liver and kidneys to strengthen the root cause, while simultaneously tonifying qi and nourishing blood to address the symptoms. In this way, essence and blood are replenished, the skin is nourished, qi circulation is harmonized, and the white patches will naturally disappear. In clinical practice, it is essential to discern the severity of the imbalance in yin and yang and appropriately add herbs that soothe the liver and regulate qi, as well as those that invigorate blood and dispel wind, to enhance the penetration of the medicinal effects. By addressing both the root and the symptoms, therapeutic efficacy can be improved.

3.2.2 Regulating Qi and Activating Blood to Resolve Stasis

Qi is the commander of blood, and blood is the mother of qi; when qi stagnates, blood stasis occurs, and when blood stasis occurs, white patches appear. The method of regulating qi and invigorating blood focuses on harmonizing the flow of qi to promote blood circulation, thereby eliminating stasis and fostering new growth, so that the skin is nourished and the white patches gradually fade. Wang Qingren, in "Corrections in Medical Literature", explicitly states: "Vitiligo results from blood stasis within the skin," and "Once original qi is deficient, it cannot reach the blood vessels; without qi in the blood vessels, blood stagnates and forms stasis." Prolonged illness leads to deficiency of vital energy and weakened qi circulation, thereby causing blood stasis. The "Opening the Orifices and Activating Blood Decoction" was developed to treat this condition. Professor Chen Mingling believes that long-standing vitiligo inevitably involves deficiency; internal deficiency impairs the circulation of blood. Adhering to the principle of "treating both the root and the symptoms," he frequently uses herbs such as Angelica sinensis, Alisma orientale, Safflower, Paeonia rubra, and Salvia miltiorrhiza to regulate qi and activate blood circulation, thereby eliminating the deep-seated, chronic pathogenic factors associated with long-standing vitiligo. "Yilin Gai Cuo: Fang Xu" records the use of Tongqiao Huoxue Decoction to treat this condition; modern practitioners often select Chuanxiong, Milk-Vine, Peach Kernel, and Safflower to activate blood circulation and resolve stasis. Among these, Chuanxiong is a herb that regulates qi within the blood; it can be combined with herbs that regulate qi—such as Bupleurum, Wood Fragrance, Tangerine Peel, Trifoliate Orange Peel, and Cyperus—to regulate the flow of qi and blood, thereby working together to resolve stasis and eliminate patches.

3.2.3 Nourishing Blood and Moistening Dryness to Disperse Wind

The onset of vitiligo is closely related to "wind." Deficiency of the liver and kidneys, along with insufficiency of essence and blood, constitutes the root cause of vitiligo. When the liver fails to regulate and the kidneys fail to store, it can lead to disruption of qi and blood, or trigger internal wind, resulting in malnourished skin and the appearance of white patches. At the same time, blood deficiency with internal wind combined with exogenous wind pathogens contributes to the disease; the interaction of wind pathogens with the skin and the disharmony of qi and blood are also key pathogenic mechanisms. The "Shengji Zonglu" states: "When wind-pathogens invade, wind and heat combine, spreading through the ying and wei systems, obstructing the muscles, and failing to dissipate over time, thus leading to this condition." "In Gu Bohua's" and "the first of the Six Methods for Treating Vitiligo is the Method of Dispelling Wind and Promoting Lung Function, which expels wind outward and promotes dispersion and penetration. "Essential Readings on Medicine" states, "To treat wind, first treat the blood; when the blood flows, the wind will naturally subside." Activating and regulating blood circulation can dispel wind and eliminate pathogenic factors, while tonifying the blood and strengthening the body makes it difficult for external wind to invade. Lan Dong [26] Based on the principle that generalized vitiligo in the progressive stage is fundamentally caused by internal liver wind and secondarily by exogenous wind pathogens, the treatment principles of soothing the liver and subduing wind, regulating qi and strengthening the spleen, and invigorating blood circulation to unblock the meridians are proposed. Wang Shibo et al. [21] believe that vitiligo results from the invasion of external wind combined with the internal stirring of latent wind, leading to local blood stasis; therefore, it can be treated according to the theory of wind-pathogen. Yang Suqing treats vitiligo from the perspective of "wind," skillfully combining the pungent and aromatic Jingjie (Schizonepeta tenuifolia) to disperse pathogens with Fangfeng (Saposhnikovia divaricata) to treat

wind and drain dampness, and pairing them with Fuping (Spirodela polyrhiza) to promote lung function and reach the exterior. Together, these form a "Jiao" formula to dispel wind and regulate qi and blood [27]. Treating vitiligo from the perspective of "wind" requires distinguishing between internal and external, deficiency and excess, and addressing both the root and the branch of the disease to accurately target the pathogenesis.

4. Current Status of Vitiligo Treatment Based on the Pathogenesis of Qi and Blood Deficiency

4.1 Experiences of Modern Medical Practitioners

In the Ming Dynasty, Chen Shigong's "Authentic Treatise on Surgery" pointed out that "vitiligo arises from blood deficiency that fails to nourish the skin and muscles," directly linking qi and blood deficiency to vitiligo, and advocated the principle that "to treat wind, one must first treat the blood; when the blood flows, the wind will naturally subside." In the Qing Dynasty, Wang Qingren's "Corrections in Medical Literature" took a unique approach, proposing that "once original qi is deficient, it cannot reach the blood vessels; when the blood vessels lack qi, blood stagnation inevitably occurs." He advocated treating the condition based on the theory of qi deficiency and blood stasis using the Bu Yang Huan Wu Decoction to tonify qi and activate blood circulation. Wang Yuanhong [28] believes that the core pathogenesis of vitiligo is "deficient qi as the root, stagnation as the manifestation." The fundamental treatment principle should be "tonifying deficiency and resolving stagnation." He recommends Taohong Siwu Decoction with modifications to tonify qi and blood and nourish the liver and kidneys, combined with herbs that disperse wind-pathogens, activate blood circulation to resolve stasis, and clear toxins to unblock the meridians, thereby expelling pathogens and strengthening the body's vital energy. Professor Qin Guowei, a Master of Traditional Chinese Medicine, approaches treatment from the perspective of the Nutritive and Defensive Qi and Blood, emphasizing that "abnormal Qi transformation of the Nutritive and Defensive Qi at the skin surface" is a key pathogenic mechanism in vitiligo. He commonly uses modified Erzhi Pills to tonify the liver and kidneys and harmonize the Nutritive and Defensive Qi, thereby restoring balance to the Nutritive and Defensive Qi and nourishing Qi and Blood [11]. The theories of medical experts throughout history share certain commonalities. First, they emphasize that deficiency of qi and blood is the root cause; pale, poorly defined white patches are signs that qi and blood cannot ascend to nourish the skin, so treatment is consistently grounded in tonifying qi and blood. Second, protecting the spleen and stomach is essential; formulas frequently include herbs such as Astragalus, Codonopsis, and Atractylodes to strengthen the spleen and tonify qi, thereby nourishing the foundation of acquired vitality. Third, promoting blood circulation and dispelling wind serves as an adjunct; building upon the foundation of tonification, herbs such as Chuanxiong, Honghua, and Fangfeng are combined to improve local microcirculation and promote the restoration of melanocyte function. Fourth, regulating emotions serves as an auxiliary measure; emotional distress can exacerbate the depletion of qi and blood. Clinical practice must pay attention to the patient's psychological state and be supplemented with psychological counseling. The key points of clinical practice lie in precise pattern differentiation, appropriate formula selection, adherence to the prescribed formula and treatment principles, and an equal emphasis on treatment and care, in order to improve therapeutic efficacy and reduce the recurrence rate.

4.2 Analysis of Common Formulas and Herbs

The treatment of vitiligo centers on pattern differentiation and treatment. Commonly used clinical formulas include Fried Licorice Decoction, Eight Treasures Decoction, Gui-Pi Decoction, Ginseng Nourishing Vitality Decoction, and Angelica Sinensis Blood-Nourishing Decoction. Fried Licorice Decoction originates from "Treatise on Cold Damage" and consists of fried licorice, ginger, cinnamon twig, ginseng, raw rehmannia, donkey-hide gelatin, ophiopogon, hemp seed, and jujube. Modern pharmacological studies have confirmed that it can improve endothelial function and regulate metabolism [3]. Zhang Yueying et al. and others believe that blood stasis is the primary cause of vitiligo. Clinically, they used Bai Dian Yin combined with Tao Hong Si Wu Tang to treat vitiligo of the qi stagnation and blood stasis pattern; a randomized controlled trial showed that its overall response rate was higher than that of the tacrolimus group.

For the treatment of vitiligo caused by qi and blood deficiency, herbs that tonify qi and nourish blood are generally selected, supplemented with herbs that promote blood circulation and dispel wind. Herbs for tonifying qi typically include Astragalus (Huangqi), Codonopsis (Dangshen), and Atractylodes (Baizhu); herbs for nourishing blood include Angelica sinensis (Danggui), Prepared Rehmannia (Shudi), White Peony (Baishao), and Polygonum multiflorum (Heshouwu); herbs for promoting blood circulation may include Ligusticum chuanxiong (Chuanxiong) and Salvia miltiorrhiza (Danshen); and herbs for dispelling wind include Saposhnikovia divaricata (Fangfeng), Angelica dahurica (Bai Zhi), and Tribulus terrestris (Ci Jili). Studies have found [30] that the diphenylstyryl glycoside in He Shou Wu upregulates MITF expression by activating the p38 MAPK signaling pathway, significantly promoting tyrosinase activity and melanin production. The active ingredient in Dang Gui, ferulic acid, can improve microcirculation, increase cutaneous blood flow, promote the delivery of nutrients and the removal of metabolic waste, thereby creating favorable conditions for the restoration of melanocyte function [31]. Houpol, one of the main active components of the traditional Chinese medicine Magnolia officinalis, was shown in a study by Yi et al. [32] to promote mitochondrial fusion by activating SIRT3, thereby reversing oxidative damage to melanocytes and exerting a protective effect on melanocytes in vitiligo.

4.3 Application of Topical Treatments and Comprehensive Therapies

Topical treatments in traditional Chinese medicine are represented by photosensitizing agents such as Psoralea corylifolia and Angelica dahurica tincture; when combined with sunlight or ultraviolet irradiation, they can promote local pigmentation recovery. Studies have shown that the topical application of a compound Psoralea corylifolia preparation in

combination with halometasone ointment for the treatment of vitiligo yields a significantly higher response rate than the use of Western medicine alone [33]. The TCM fumigation method involves decocting qi-tonifying and blood-activating herbs such as Astragalus, Angelica sinensis, and Ligusticum chuanxiong to create a steam bath for the affected area; the combined effects of heat and medicinal properties serve to warm and unblock the meridians and harmonize qi and blood [34]. The herbal bath method involves decocting herbs such as Psoralea corylifolia, Polygonum multiflorum, and Angelica dahurica to create a solution for external washing, which acts directly on the affected area to improve microcirculation. Acupoint plaster application targets points such as Zusanli (ST36), Xuehai (SP10), and Sanyinjiao (SP6), where powders made from herbs like Astragalus and Angelica sinensis are applied to stimulate meridian energy and harmonize the nutritive and defensive qi [35]. Acupuncture and moxibustion therapies harmonize qi and blood through methods such as fine-needle acupuncture, fire-needle therapy, and moxibustion. Modern medicine has confirmed that the thermal stimulation from fire-needle therapy can penetrate deep into the skin tissues, promoting local vasodilation in the damaged skin, activating tyrosinase activity, and increasing melanin levels [36]. Regarding integrated Traditional Chinese and Western medicine treatment, a self-formulated Chinese herbal formula combined with NB-UVB irradiation achieved an overall effective rate of 83. 33%, significantly higher than the 55.00% observed in the group treated with NB-UVB alone [37].

A comprehensive therapy combining oral medication, topical treatment, acupuncture, and emotional regulation can significantly improve therapeutic efficacy and reduce the recurrence rate. The 308 nm excimer laser promotes repigmentation by inducing keratinocytes to secrete basic fibroblast growth factor; when combined with oral Chinese herbal medicine, it enhances therapeutic efficacy and reduces the required light exposure dose [38]. In terms of modern pharmaceutical research, formulations such as Compound Glycyrrhizin Tablets assist in the treatment of vitiligo through immunomodulatory, anti-inflammatory, and antioxidant mechanisms; when used in combination with phototherapy, they can improve clinical efficacy [39]. In summary, all of the aforementioned external treatment methods should be based on pattern differentiation. By selecting appropriate external treatments according to the patient's constitution, disease stage, and characteristics of the skin lesions, and by integrating internal and external therapies, therapeutic efficacy can be enhanced.

5. Discussion

5.1 The Guiding Role of the Pathogenesis of Qi and Blood Deficiency in the Treatment of Vitiligo

Deficiency of Qi and Blood, as the core pattern of the theory of disharmony between Qi and Blood, is fundamentally characterized by an insufficiency of congenital endowment or a lack of proper postnatal nourishment, leading to a deficiency in the sources for the generation of Qi and Blood. Deficiency of Qi results in an inability to solidify the defensive Qi and a lack of propulsive force, while deficiency of Blood leads to inadequate nourishment of the skin and the development of wind and dryness. The guiding value of this pathogenesis for treatment is reflected in three aspects: First, it establishes "tonifying Qi and nourishing Blood" as the fundamental therapeutic principle, with representative formulas such as Danggui Bu Xue Tang; second, it reveals the stage-specific characteristics of "disease caused by deficiency": the stable phase is primarily characterized by deficiency, with an emphasis on nourishing the acquired foundation; the progressive phase addresses both root and branch, incorporating the removal of wind and the activation of blood circulation; third, it establishes the progressive pattern of "root–branch–transformation, " where the lack of sources for the generation of qi and blood constitutes the root, the malnourishment of the skin and the stagnation of qi and blood constitute the branch, and blood dryness giving rise to wind constitutes the transformation, thereby guiding clinical staging and treatment.

5.2 Limitations and Shortcomings of Existing Research

Current research faces multiple bottlenecks. First, the pattern differentiation system lacks objective quantitative indicators; there is a high degree of clinical overlap between patterns such as qi and blood deficiency and liver-kidney insufficiency, and subjective assessment criteria—such as tongue and pulse diagnosis—are difficult to standardize. Second, research on herbal formulas lacks depth; classic formulas such as Fried Licorice Decoction and Eight Treasures Decoction have not been validated through multicenter randomized controlled trials, resulting in a low level of clinical evidence. Furthermore, the "component-target-pathway" mechanisms underlying the combination of ingredients in these formulas remain unexplained. Operational parameters for external therapies are not standardized; key variables such as fire needle temperature, moxibustion duration, and fumigation concentration lack standardized definitions, affecting the reproducibility of therapeutic effects. Furthermore, existing literature lags in establishing comprehensive efficacy evaluation systems for the synergy between internal and external therapies and for integrated Traditional Chinese and Western medicine. There is also a scarcity of long-term follow-up data, and insufficient reporting on endpoints such as recurrence rates and safety, which constrains the clinical translation of the Qi and Blood theory.

References

[1] Pigmentary Disorders Subcommittee of the Dermatology and Venereology Professional Committee, Chinese Society of Integrated Traditional and Western Medicine; Vitiligo Research Center, Dermatology and Venereology Branch, Chinese Medical Association; Pigmentary Disorders Subcommittee, Dermatology Branch, Chinese Medical Doctors Association. Consensus on the Diagnosis and Treatment of Vitiligo (2024 Edition) [J]. Chinese Journal of Dermatology, 2024, 57(12): 1065–1070.

[2] Yang Jie, Hu Nan, Wu Jingdong. Advances in Research on the Pathogenesis and Treatment of Vitiligo Using Both Traditional Chinese and Western Medicine [J]. Journal of Practical Traditional Chinese Internal Medicine, 2025, 39(4): 115-118.

[3] Chen Lele, Chen Shuguang, Sun Kunkun, et al. Research Progress on the Treatment of Vitiligo with Traditional Chinese Medicine [J]. Chinese Journal of Basic Medicine in Traditional Chinese Medicine, 2022, 28(5): 822-826.
[4] Jiang Yubao. An In-Depth Analysis of the Theory of "Disharmony Between the Ying and Wei Qi Leading to Bi Syndrome" in the "Huangdi Neijing" [J]. Guangming Traditional Chinese Medicine, 2011, 26(4): 648–650.
[5] Yan Dexin. Treating Cardiovascular and Cerebrovascular Diseases from the Perspective of "Qi Is the Source of All Diseases, and Blood Is the Nurturing Force of All Diseases" (Part II) [J]. Tianjin Journal of Traditional Chinese Medicine, 2009, 26(6): 441–442.
[6] Liu Chang, Xu Aiqin, Feng Zixiang, et al. Application of "Strengthening the Spleen and Stomach, Harmonizing the Ying and Wei" in the Treatment of Skin Barrier Disorders [J]. Forum of Traditional Chinese Medicine, 2023, 38(6): 23–24.
[7] Tu Fuhan, Liang Yongfei, Wang Xingjie. Some Reflections on the Diagnosis and Treatment of Vitiligo in Traditional Chinese Medicine [J]. Journal of Traditional Chinese Medicine, 2014, 32(12): 3011-3014.
[8] Han Jingqian, Yao Weifeng. Research Progress on Oxidative Stress in the Pathogenesis of Vitiligo [J]. Chinese Journal of Integrative Dermatology and Venereology, 2024, 23(3): 273–275.
[9] Shang Jianji. Detection and Analysis of Peripheral Blood T-Lymphocyte Subpopulations in Patients with Vitiligo [J]. Journal of Modern Integration of Traditional Chinese and Western Medicine, 2006, (20): 2805.
[10] Hui Xueying, Lei Hui, Du Huibo, et al. Traditional Chinese Medicine Perspectives on Microcirculatory Disorders and Current Treatment Practices [J]. Journal of Modern Integration of Traditional Chinese and Western Medicine, 2009, 18(24): 2996-2998.
[11] Duan Kexin, Wang Jingrui, Chen Tong, et al. Experience of Master of Traditional Chinese Medicine Qin Guowei in the Treatment of Vitiligo Based on the Theory of Ying, Wei, Qi, and Blood. Journal of Traditional Chinese Medicine, 39(01), 200–203.
[12] Formulas of the Taiping Huimin Heji Bureau [M]. Compiled by Liu Jingyuan. Beijing: People's Health Publishing House, 2017: 141–142.
[13] Zhang Xinrong, Xu Guomei, Yuan Jiaojiao, et al. A Discussion on the Diagnosis and Treatment of Blood-Deficiency Type Vitiligo Based on the Theory of "Essence and Blood Share the Same Origin" [J]. Jiangsu Journal of Traditional Chinese Medicine, 2021, 53(10): 44–47.
[14] Yang Ming, Li Yuanli, Gao Ying, et al. Diagnostic and Therapeutic Approaches to Childhood Vitiligo from a Traditional Chinese Medicine Perspective [J]. Chinese Journal of Practical Pediatrics, 2025, 40(5): 397–400.
[15] Gao Feng. An Analysis of the Treatment of Skin Diseases from the Perspective of the Spleen and Stomach [J]. Inner Mongolia Journal of Traditional Chinese Medicine, 2025, 44(5): 148-151.
[16] Wang Huige, Yu Wenchao, Wang Yuanhong. Treatment of Vitiligo Based on the Theory of "Stagnation of De Qi" [J]. Chinese Journal of Basic Medicine in Traditional Chinese Medicine, 2026, 32(2): 420–424.
[17] Wang Qian, Cai Nianning. Current Status of Research on the Regulation of Tyrosinase in the Pathogenesis of Vitiligo Using Traditional Chinese and Western Medicines [J]. Beijing Journal of Traditional Chinese Medicine, 2007, (5): 317-319. .
[18] Hang Xiaohan, Yang Bilian, Li Nan, et al. A Brief Discussion on the Treatment of Vitiligo from the Perspective of Luo Pathology [J]. Global Traditional Chinese Medicine, 2020, 13(7): 1236-1238.
[19] Li Shuiqi, Li Qingyan, Liu Dongdong, et al. A Study on Epidermal Melanocytes and Dermal Melanophages in Vitiligo [J]. Chinese Journal of Practical Medicine, 2014, 41(13): 32-33.
[20] Gu Naiqiang, Gu Naifang. Gu Bohua's Six Methods for Treating Vitiligo [J]. Shanghai Journal of Traditional Chinese Medicine, 1988, (1): 17–19.
[21] Wang Shibo, Song Xiuzhu. An Analysis of the Clinical Diagnosis and Treatment of Vitiligo Based on the Theory of "Wind and Qi Causing a Hundred Diseases" [J]. Journal of Zhejiang University of Traditional Chinese Medicine, 2022, 46(4): 395–399.
[22] Song Wei, Lan Yan, Ai Rudi, et al. Clinical Experience in the Treatment of Vitiligo by the Sichuan Wen School of Dermatology [J]. Chinese Journal of Traditional Chinese Medicine, 2021, 36(12):7180-7184.
[23] Zhao Jingxia, Zhang Lei, Li Ping, et al. Regulatory Effects of Serum Containing Herbs from the Liver-Kidney Tonifying Formula on Tyrosinase Activity and Expression in Mouse Melanoma Cells [J]. Chinese Journal of Traditional Chinese Medicine, 2011, 36(18): 2567-2570.
[24] Wang Yuanhong, Yu Jiaxin, Gao Jie. Clinical Experience with Acupuncture and Cupping Therapy for Vitiligo [J]. Journal of Traditional Chinese Medicine, 2021, 49(4): 58–61.
[25] Zhang Jiahao, Huang Huimin, Chen Mingling. Clinical Insights into the Diagnosis and Treatment of Vitiligo by Professor Chen Mingling [J]. Asia-Pacific Traditional Medicine, 2021, 17(2): 112-114.
[26] Ma Lihua, Lan Dong. Insights on the Treatment of Refractory Vitiligo Based on the Theory of Internal Wind [J]. Electronic Journal of Clinical Medicine and Pharmacy, 2018, 5(3): 108–109.
[27] Zhang Yanhong, An Yuepeng, Yang Suqing. Yang Suqing's Experience in Treating Vitiligo with Jiaoyao [J]. Jilin Journal of Traditional Chinese Medicine, 2022, 42(2):180-183.
[28] Wang Huige, Yu Wenchao, Wang Yuanhong. Treatment of Vitiligo Based on the Theory of "Qi Deficiency and Stagnation" [J]. Chinese Journal of Basic Medicine in Traditional Chinese Medicine, 2026, 32(2):420-424.
[29] Zhang Yueying. Observation on the Efficacy of Bai Dian Decoction Combined with Modified Tao Hong Si Wu Decoction in the Treatment of Vitiligo of the Qi and Blood Stasis Type [J]. Practical Clinical Integration of Traditional Chinese and Western Medicine, 2021, 21(23): 51-52.
[30] Yu Jie, Lin Pei, Lu Jianmei, et al. Study on the Regulatory Effects of Diphenylethylene Glycoside, an Active Component of He Shou Wu, on Lipid Synthesis, Degradation, and Transport in Hepatocytes [J]. Chinese Journal of Pharmacy, 2014, 49(23): 2077–2082.

[31] Wu Yanhua, Tang Nan, Cai Lanhua, et al. Effects of ferulic acid on melanocyte proliferation, melanin synthesis, tyrosinase activity, and c-kit and ERK protein expression [J]. Chinese Journal of Dermatology, 2014, 47(10):728-731.
[32] Li Y, Liang C, Zhou X. The application prospects of honokiol in dermatology [J]. Dermatol Ther, 2022, 35: e15658.
[33] Shu Youlian. Clinical Observation on the Treatment of Vitiligo with Compound Psoralea Tincture. Chinese Journal of Integrated Traditional and Western Dermatology and Venereology, 7(3), 156–157.
[34] Yu Zhaohui. Efficacy Observation of 308 nm Excimer Light Combined with Traditional Chinese Medicine Fumigation in the Treatment of 120 Cases of Vitiligo [A]. Proceedings of the 2014 National Academic Conference on Integrated Traditional Chinese and Western Medicine in Dermatology and Venereology [C]. Shanghai, 2014:135.
[35] Ren Leisheng, Fu Xuhui, Wang Zhexin. Observation on the Efficacy of Traditional Chinese Medicine Soaking Combined with Calcipotriol-Betamethasone Ointment in the Treatment of Acral Vitiligo [J]. Journal of Dermatology and Venereology, 2017, 24(2): 92–94.
[36] Huang M, Tang L, Li X, et al. Clinical Observation on the Therapeutic Effect of Filiform Fire Needle for Vitiligo: A Retrospective Study [J]. Dermatol Ther, 2020, 33: e14415.
[37] Xia Yu. Clinical Observation of 60 Cases of Vitiligo Treated with Oral Traditional Chinese Medicine Combined with NB-UVB Irradiation [J]. Chinese Journal of Dermatology and Venereology, 2014, 28(10): 1067-1068.
[38] Ma Yue, Yang Chunjun, Deng Zanhong, et al. Advances in the Treatment of Vitiligo with 308 nm Excimer Laser [J]. Journal of Laser Biology, 2012, 21(4): 294–298+339.
[39] Guan Peng. Comparative Analysis of the Efficacy of 308 nm Excimer Laser and NB-UVB in the Treatment of Vitiligo [J]. Dermatology and Venereology, 2019, 41(2): 226-227.

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