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Review of the Pathogenesis and Classical Formula of Ulcerative Colitis in Traditional Chinese Medicine

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Abstract: ***Ulcerative Colitis (Ulcerative Colitis, UC) is a chronic nonspecific inflammatory bowel disease with complex etiology and prone to recurrent episodes, significantly impacting patients' quality of life. Although traditional Chinese medicine does not have a specific name for this condition, it categorizes it under conditions such as "dysentery," "diarrhea," and "intestinal inflammation." This article begins with an analysis of the etiological and pathogenic mechanisms of UC from the perspective of traditional Chinese medicine, systematically examining common TCM syndromes. It focuses on the therapeutic characteristics of classic formulas like Shen Ling Bai Zhu San, Taohua Tang, Bai Tou Weng Tang, Si Shen Wan, and Bu Zhong Yi Qi Tang in different syndromes, along with their modern pharmacological research foundations. The article also explores their multi-target mechanisms in regulating immune function, repairing intestinal barriers, and maintaining microbial balance. Additionally, it summarizes the advantages and current limitations of TCM in treating UC, aiming to provide theoretical basis and reference for future clinical diagnosis and research.***

Keywords: Ulcerative colitis, TCM pathogenesis, Syndrome differentiation and treatment, Classical formula, Modern pharmacological mechanism**.**

1. Introduction

Ulcerative Colitis (Ulcerative Colitis, UC) [1] is a chronic nonspecific inflammatory bowel disease with an unclear etiology, primarily affecting the mucosa of the rectum and colon. Clinically, it is characterized by diarrhea, mucus and bloody stools, and abdominal pain. The course of the disease is recurrent and protracted, prone to relapse, and in severe cases, may even progress to colon cancer. In recent years, with changes in lifestyle, Westernization of dietary habits, and increased social stress, the incidence of UC [2] has been rising annually. This condition significantly impacts patients' quality of life and has become one of the most challenging diseases globally. Modern medicine posits that the pathogenesis of UC [3] involves multiple factors including genetic predisposition, immune dysregulation, infection, disruption of gut microbiota, and damage to barrier function. Western treatments mainly consist of glucocorticoids, aminosalicylates, immunosuppressants, and biologics, which can alleviate acute symptoms but have high recurrence rates, strong dependency, and significant side effects. In contrast, traditional Chinese medicine, due to its advantages of syndrome differentiation, holistic regulation, and multi-target modulation, has shown unique efficacy and prospects in the treatment of UC. Although there is no specific term for "ulcerative colitis" in traditional Chinese medicine, based on symptom characteristics, it is often categorized under conditions such as "dysentery," "intestinal wind," "diarrhea," and "intussusception." The primary etiological mechanisms include "spleen deficiency with dampness excess," "damp-heat descending," and "stagnation of blood stasis." In recent years, with the development of experimental techniques, numerous studies have confirmed that traditional Chinese medicine can exert therapeutic effects by regulating immune function, improving intestinal barriers, and modulating microbial structure. This paper aims to systematically summarize the commonly used formulas and clinical application experience from the perspective of TCM's theoretical understanding of UC, combined with modern pharmacological research, to explore the mechanism of action of TCM in treating ulcerative colitis, so as to provide reference for further clinical research and theoretical deepening.

2. Theoretical Understanding of Ulcerative Colitis in Traditional Chinese Medicine

2.1 Records of Ancient Literature and Verification of Disease Names

Although Traditional Chinese Medicine does not have a specific term for "ulcerative colitis," based on clinical manifestations such as prolonged diarrhea, bloody stools, mucus in the stool, abdominal pain, and tenesmus, it is often categorized under conditions like "dysentery," "diarrhea," "intestinal wind," "intestinal wind with spleen wind." The *Huangdi Neijing: Suwen-Six Elements Correct Discourse* states: "When dampness invades, it leads to diarrhea." This suggests that internal dampness can cause diarrhea. The *Jinkui Yaolue: Dysentery Chapter* lists various types of dysentery, including "red dysentery," "white dysentery," "red and white dysentery," and "prolonged dysentery," which align with the recurrent course and mucopurulent bloody stools characteristic of UC. The *Zhusu Yuanhou Lun: Intestinal Wind Symptoms* notes: "When the large intestine is affected by heat, it rots and forms pus, which follows the qi downward, emitting a continuous foul odor." Its symptom characteristics, location of the disease, and etiological analysis are similar to those of modern UC. The *Jingyue Quanshu: Dysentery* also records: "Dysentery is due to excessive heat in the intestines; the qi is depressed by dampness, leading to heat, which then rises with dampness, resulting in red and white discharge." From an etiological perspective, it posits that damp-heat is the primary pathogenic factor, consistent with the mechanism of damp-heat descending commonly seen in modern UC. It is

evident that although traditional Chinese medicine did not have modern disease names in its early stages, it had a relatively mature theoretical foundation for describing symptoms, understanding etiology and pathogenesis, and formulating treatment strategies. Modern scholars generally consider UC as a "mixed syndrome" between "dysentery" and "diarrhea," further distinguishing its syndrome attributes based on the duration, severity, and intensity of symptoms. For symptoms such as "mucopurulent bloody stools," "persistent diarrhea," and "morning diarrhea," one can also refer to ancient disease names like "prolonged dysentery," "intestinal wind," and "intestinal wind with spleen wind" for differential diagnosis.

2.2 Discussion on Etiology and Pathogenesis of TCM

According to Traditional Chinese Medicine, the occurrence of ulcerative colitis is closely related to multiple factors such as spleen and stomach weakness, damp-heat accumulation, emotional imbalance, irregular diet, and long-term illness damage. The pathogenesis of this condition is characterized by both deficiency and excess, with a mixture of deficiency and excess. The primary affected area is the large intestine, and the pathogenesis involves the spleen, kidney, liver, and other organ systems. Common causes and mechanisms are as follows: [4-5]

2.2.1 Spleen Deficiency and Dampness Internalization

The spleen is the foundation of postnatal health, responsible for transforming and transporting food and water, as well as regulating the ascending and descending functions. Irregular eating habits and prolonged illness can lead to depletion of the spleen yang, impairing its ability to transform and transport, causing water and dampness to accumulate internally. Dampness is a yin pathogen that tends to stagnate in the middle energizer, easily descending into the large intestine, disrupting intestinal function and leading to symptoms such as diarrhea, sticky stools, and poor appetite.

2.2.2 Damp-Heat Accumulation and Intestinal Damage

Long-term dampness transforms into heat, or external damp-heat invasion occurs, or the spleen fails to function properly, leading to internal damp-heat production. This damp-heat then descends into the large intestine, scorching the intestinal network, eroding the intestinal wall, and damaging yin blood. Consequently, symptoms such as bloody stools, anal burning, abdominal pain, and a feeling of heaviness may appear. This is a common pathogenesis during the acute phase of the disease, with damp-heat being the primary causative factor.

2.2.3 Qi stagnation and blood stasis, obstruction of collaterals

prolonged illness can lead to the invasion of pathogenic factors into the meridians, or the retention of pathogens in the intestines, causing impaired qi flow and stagnation of blood. This results in the obstruction of intestinal collaterals, leading to malnourishment and potential mucosal erosion, bloody stools, and abdominal pain. Blood stasis also hinders mucosal repair, increasing the risk of recurrence, which is a significant factor contributing to the persistence and difficulty in treating this condition.

2.2.4 Emotional Distress and Liver Qi Stagnation

Emotional injuries lead to liver qi stagnation, which in turn invades the spleen, disrupting its function. This results in dampness due to qi stagnation, obstructing the intestines and causing symptoms such as diarrhea, abdominal pain, and significant mood swings. Emotional factors often serve as triggers or exacerbating factors, commonly observed during the delayed progression phase and relapse phase of UC.

2.2.5 Chronic illness affecting the kidneys, leading to spleen and kidney yang deficiency

Prolonged illness results in physical weakness, or frailty due to old age, or congenital insufficiency, causing spleen and kidney yang deficiency, decline of the life gate fire, failure to warm and nourish, and impaired function of the large intestine's transmission. This leads to early morning diarrhea, loose stools, heaviness and fatigue, cold aversion, and cold limbs. Such symptoms are commonly seen during remission or chronic progression stages of deficiency conditions.

In summary, the etiology and pathogenesis of ulcerative colitis are complex, with cold and heat mixed together and deficiency and excess seen as its prominent characteristics. In treatment, it is necessary to distinguish between the primary and secondary causes of deficiency and excess, grasp the dynamic of urgency and cold and heat, and give consideration to both the main and secondary causes and apply both tonification and supplementation.

2.3 Analysis of Common Evidence Types

Based on the above etiology, pathogenesis and clinical manifestations, the TCM syndromes of ulcerative colitis are mainly divided into the following categories. In practical application, the syndrome should be flexibly identified according to the individual constitution, symptom changes and disease course of patients.

2.3.1 Spleen Deficiency with Excess Dampness

This condition is often caused by insufficient spleen qi and impaired transformation and transportation functions, leading to the internal generation of dampness and turbidity, which stagnates in the intestines and disrupts the transmission function. Clinically, it is commonly characterized by persistent diarrhea, loose stools with mucus, abdominal distension, poor appetite, limb weakness, pale tongue with white greasy coating, and soft rapid pulse. Treatment should focus on strengthening the spleen and invigorating qi, resolving dampness, and stopping diarrhea. Commonly used formulas include Shen Ling Bai Zhu San and modified Si Jun Zi Tang.

2.3.2 Damp-Heat Descending Type

This condition is often caused by external damp-heat invasion or impaired spleen function leading to internal dampness, which then accumulates in the large intestine. Symptoms include abdominal pain with urgent bowel movements, mucus

and bloody stools, anal burning sensation, tenesmus, short and dark urine, red tongue with yellow greasy coating, and slippery rapid pulse. Treatment should focus on clearing heat and resolving dampness, cooling blood and detoxifying. Options include variations of White-headed Herbs Decoction, Coptis Detoxifying Decoction, and Immortal Life-Saving Drink.

2.3.3 Qi Stagnation and Blood Stasis Type

This type often results from prolonged illness affecting the meridians, leading to stagnation of qi and poor blood circulation, which in turn causes obstruction of the intestinal network. The main symptoms include fixed abdominal pain, bloody stools with dark blood, a dark purple tongue or petechiae, and wiry-thready pulse. Treatment should focus on promoting qi flow, activating blood circulation, resolving stasis, and unblocking the meridians, commonly using modified formulas such as Shaofu Zhuyu Decoction and Danshen Drink.

2.3.4 Liver Qi Stagnation and Spleen Deficiency Type

This condition often results from emotional disturbances, leading to liver qi stagnation that invades the spleen, affecting its function of transformation and transportation. Clinically, diarrhea is closely related to emotional fluctuations, accompanied by chest and rib pain, poor appetite, abdominal distension, pale tongue with red edges, thin white coating on the tongue, and wiry-thin pulse. Treatment should focus on soothing the liver and resolving depression, as well as strengthening the spleen and regulating qi. Professor Zhu Ying proposed the theory that “the liver is connected to the large intestine,” advocating for treating such patients with liver-soothing and qi-regulating methods, supplemented by psychological adjustment, which has proven effective.

2.3.5 Spleen and Kidney Yang Deficiency Type

This type belongs to the category of deficiency syndromes, commonly seen in patients with long-standing illness or elderly individuals who are physically weak. Symptoms include early morning diarrhea, loose stools without satisfaction, cold aversion and cold limbs, soreness and weakness in the lower back and knees, pale tongue with white coating, and deep, fine pulse. Treatment should focus on warming and tonifying the spleen and kidneys, as well as consolidating and stopping diarrhea. Commonly used formulas include Si Shen Wan and modified Shao Yao Tang, with moxibustion being particularly suitable for combined therapy.

In addition, the above syndromes may also appear in clinical crossover, such as damp-heat and stasis, deficiency and excess, cold and heat mixed, etc., which should be differentiated and adjusted according to the severity and stage of the disease to ensure the precision and individualization of treatment.

3. Common Prescriptions and Drugs for Treating Ulcerative Colitis in Traditional Chinese Medicine

3.1 Classic Prescriptions

3.1.1 Shen Ling Bai Zhu San

Shen Ling Bai Zhu San is derived from the *Taiping Huimin Heji Bureau Fang* and consists of ginseng, white atractylodes, poria, licorice, coix seed, mung bean, lotus seed, yam, cardamom, and platycodon. It has the functions of tonifying the spleen and invigorating qi, as well as promoting diuresis and stopping diarrhea. This formula is primarily used to treat chronic diarrhea, poor appetite, fatigue, and loose stools caused by spleen deficiency with dampness accumulation, and it is widely applied in the treatment of ulcerative colitis associated with spleen deficiency and dampness. Modern pharmacological studies [6] have found that Shen Ling Bai Zhu San has multiple mechanisms of action, including regulating the balance between Th17/Treg cells, inhibiting inflammatory factors, and repairing the mucosal barrier. Research by Cao Xia [6] et al. showed that after 12 weeks of combined treatment with this formula and mesalamine for UC patients, there was a significant reduction in pro-inflammatory cytokines such as IL-6, IL-17, and TNF-α, while anti-inflammatory cytokines like IL-10 and TGF-β increased. The ratio of Th17/Treg cells was also regulated, improving immune imbalance and showing better efficacy than monotherapy with Western medicine. Clinical studies by Gao Liang [7] et al. also confirmed that Shen Ling Bai Zhu San, when combined with enteral nutrition support, not only significantly improved core symptoms such as diarrhea and bloody stools but also effectively increased serum albumin, prealbumin, and hemoglobin levels, enhancing nutritional status and quality of life. The overall therapeutic effect was significantly better than that of monotherapy with Western medicine or nutritional support groups. Additionally, Hong Jinping [8] et al. reported that this formula can reduce serum levels of IL-17, IL-23, and TNF-α, increase IL-10 expression, and has positive implications for controlling inflammatory responses and reducing intestinal mucosal damage. It is also safe with a low incidence of adverse reactions, making it suitable for long-term management. From the perspective of [9] components, Shen Ling Bai Zhu San is rich in various active ingredients such as ginsenosides, poria acid, atractylodes lactone, and yam polysaccharides, which exhibit multiple biological activities including anti-inflammatory, antioxidant, immune regulation, and mucosal repair. Jiang Li [9] et al. systematically summarized the material basis and mechanism of action of this formula in the treatment of UC, proposing that it may achieve synergistic effects in anti-inflammatory and intestinal immune barrier regulation through signaling pathways such as NF-κB, AMPK, and JAK/STAT, providing theoretical support for further development and promotion. In summary, Shen Ling Bai Zhu San, as a classic representative formula of traditional Chinese medicine for tonifying qi, strengthening the spleen, removing dampness, and stopping diarrhea, has been verified by multiple modern clinical and basic studies for its definite efficacy and modern mechanisms in the treatment of ulcerative colitis, especially suitable for patients with spleen deficiency and dampness excess, offering promising prospects for clinical application.

3.1.2 Peach Blossom Decoction

Peach Blossom Decoction originates from Zhang Zhongjing *Treatise on Cold Damage Diseases-Shaoyin Chapter*, consisting of three herbs: red ochre, dried ginger, and glutinous rice. It was originally used to treat "loose stools with pus and blood," which falls under the category of Shaoyin disease due to cold transformation. The *Treatise on Cold Damage Diseases* states: "For Shaoyin disease with loose stools and pus and blood, Peach Blossom Decoction is the primary treatment." The pathogenesis often involves spleen and kidney yang deficiency, cold in the intestines and stomach, and uncontrollable leakage. The entire formula has the functions of warming the middle to dispel cold, astringing the intestines to stop diarrhea, and consolidating the anus to stop bleeding. It is one of the representative formulas for treating chronic diarrhea and dysentery using the warming and astringent method in traditional Chinese medicine. Peach Blossom Decoction is simple yet highly effective. In modern practice, it is often used to treat ulcerative colitis with spleen and kidney yang deficiency, primarily characterized by persistent diarrhea, early morning diarrhea, pus and blood in the stool, soreness and weakness in the waist and knees, and cold limbs. Red ochre in the formula can astringe and stop diarrhea and bleeding, and has an adsorption effect that reduces intestinal toxin stimulation; dried ginger warms the middle to dispel cold, promoting the rise of yang energy; glutinous rice is sweet and neutral, benefiting the stomach and aiding in protecting the gastrointestinal mucosa. When used together, these three herbs not only warm and astringe but also tonify and consolidate, making them suitable for conditions characterized by uncontrollable leakage. Modern pharmacological studies and clinical evidence support the effectiveness of Peach Blossom Decoction in treating UC. Liu Yang [10] et al. found in a randomized controlled trial that combining Peach Blossom Decoction with mesalamine for treating UC with spleen and kidney yang deficiency significantly improved TCM symptom scores, reduced Mayo scores, Barron endoscopic scores, erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), and other indicators, while also reducing the recurrence rate within three months compared to a placebo group, with no significant adverse reactions and good safety. Ji Wenpeng [11] et al. treated 52 chronic UC patients with modified Peach Blossom Decoction, using conventional Western medicine as the control group. The total effective rate of the treatment group reached 96%. 15%, significantly better than the control group 82.35%. The study shows that Peach Blossom Decoction can effectively alleviate major symptoms such as abdominal pain and diarrhea, tenesmus, and promote the repair of the colonic mucosa. Additionally, Lu Ai Yangzi [12] et al., through a systematic evaluation and Meta-analysis of 16 clinical randomized controlled trials, found that the overall effectiveness rate of Peach Blossom Decoction in treating UC was higher than that of the control group (RR=1.19, P<0.001). It also showed advantages in colonoscopy scores and control of inflammatory factors such as TNF-α, while having a lower incidence of adverse reactions (RR=0.40, P<0.001), demonstrating good safety and evidence-based medical foundation. In summary, as a classic formula for warming and consolidating in traditional Chinese medicine, modern research has confirmed its significant therapeutic effects on patients with spleen-kidney yang deficiency type UC, especially suitable for those with long-term disease course, loose stools with pus and blood, and prominent yang deficiency symptoms. Its mechanism of action covers multiple aspects including warming yang to transform dampness, enhancing the mucosal barrier, anti-inflammatory, and immune regulation, making it worthy of clinical promotion and further research.

3.1.3 Whitehead Decoction

The Whitehead Decoction originates from "Treatise on Cold Damage Diseases-Differentiation of Pulse and Symptoms of Jueyin Diseases and Their Treatment," composed of four herbs—Whitehead, Coptis, Phellodendron, and Fraxini. It is known for its heat-clearing, detoxifying, blood-cooling, and dysentery-stopping properties, making it a classic prescription for treating damp-heat dysentery. Zhang Zhongjing's original text states: "Those who have diarrhea and wish to drink water should be treated with Whitehead Decoction because there is heat." The pathogenesis aligns closely with modern Chinese medicine's understanding of ulcerative colitis (UC) characterized by internal damp-heat, excessive heat-toxin, and damage to the intestinal network. In traditional Chinese medicine, Whitehead Decoction is indicated for active phases of UC primarily marked by intense damp-heat, with clinical manifestations including [13] common mucus and bloody stools, abdominal pain, anal burning, red tongue with yellow coating, and slippery rapid pulse. Modern pharmacological studies [14] show that Whitehead Decoction not only significantly alleviates clinical symptoms in UC patients but also exerts multi-target comprehensive effects in regulating immune responses, inhibiting inflammatory factors, repairing the intestinal mucosal barrier, and modulating gut microbiota. Animal experiments by Zhu Weinai et al. found that Whitehead Decoction can reduce pro-inflammatory mediators such as IL-6, IL-1β, and high-mB1 (HMGB1), activate the Nrf2/HO-1 antioxidant stress signaling pathway, effectively reduce intestinal tissue inflammation, and enhance colonic barrier function. This study provides a new perspective on the mechanism of Whitehead Decoction from the interaction between oxidative stress and the HMGB1 inflammatory pathway. In the clinical controlled study by Shi Lijing [15] et al., Bai Tou Weng Decoction combined with mesalamine was used to treat patients with UC in the hyperactive heat-toxin type. After 4 weeks of treatment, patients showed significant improvements in TCM syndrome scores, Mayo score, serum inflammatory factors (such as CRP, Gal-9, IL-1β), and intestinal barrier function indicators (DAO, HIF-1α, D-lactic acid). Additionally, the number of bifidobacteria and lactobacilli increased significantly, while enterobacteria and Escherichia coli decreased, indicating that Bai Tou Weng Decoction can effectively improve gut microbiota imbalance and mucosal barrier function. Furthermore, Rao Chunmei [16] et al. reviewed that the main active components of Bai Tou Weng Decoction include baicalin A, B4, berberine, and phellodendrine, which have multiple effects such as anti-inflammatory, antioxidant, regulation of T-cell immunity, and maintenance of gut microbiota stability. In particular, baicalin B4 can inhibit inflammatory responses through the NF-κB signaling pathway, improve symptoms in UC mouse models, and regulate Th17/Treg immune balance, thereby controlling immune abnormalities. In summary, as an important representative formula for treating damp-heat type ulcerative colitis in traditional Chinese medicine, Bai Tou Weng Decoction has a profound theoretical foundation and

solid modern research basis. By regulating multiple signaling pathways (such as HMGB1/Nrf2, NF-κB, IL-6/STAT3, TGF-β1/Smad3), it achieves multiple functions including clearing heat and detoxifying, anti-inflammatory immunity, repairing the mucosa, and reconstructing the microecosystem. It has gradually become one of the important treatment options for UC combining traditional Chinese and Western medicine, with broad clinical application prospects.

3.1.4 Si Shen Wan

Si Shen Wan, derived from Xue Ji's "Comprehensive Internal Medicine" of the Ming Dynasty, is composed of Psoralea corylifolia, Amomum rubrum, Evodia rutaecarpa, Schisandra chinensis, Zingiber officinale, and Jujube. It is a classic prescription for treating "morning diarrhea" and "chronic dysentery." Its efficacy lies in warming the kidneys and spleen, astringing the intestines to stop diarrhea, primarily addressing chronic dysentery caused by yang deficiency in the spleen and kidney. In traditional Chinese medicine, ulcerative colitis falls under categories such as "diarrhea," "intestinal dysentery," and "chronic dysentery." Yang deficiency in the spleen and kidney is a common pathogenesis in the later stages, manifesting as morning diarrhea, loose stools without satisfaction, cold aversion, cold limbs, and soreness and weakness in the waist and knees. Si Shen Wan is specifically formulated for this syndrome, with proven efficacy [17]. From a modern pharmacological perspective, Si Shen Wan has a comprehensive intervention effect through multiple targets and mechanisms. Firstly, it regulates the Th17/Treg signaling pathway to balance immune function. Studies by Pan Qihong et al. show that Si Shen Wan can increase the proportion of Treg cells and decrease the proportion of Th17 cells, modulate their secretion of inflammatory factors (such as IL-17, IL-6, TNF-α) and anti-inflammatory factors (such as IL-10), effectively alleviating inflammation, stabilizing the intestinal mucosal barrier, significantly improving UC symptoms, with low adverse reactions and good safety. Additionally, Si Shen Wan can repair the intestinal mucosal barrier by regulating the Notch signaling pathway. Song Lichao [18] et al. found that Si Shen Wan regulates the Numb/Notch signaling axis, inhibits the overexpression of Notch1, Notch3, and their ligands Jagged1 and DLL1, upregulates Numb protein, effectively improves the regenerative capacity of colonic epithelial cells, reduces intestinal damage in DSS-induced colitis model mice, and promotes tissue healing. In terms of gut microbiota regulation, Ma Hang [19] et al.'s clinical study confirmed that Si Shen Wan combined with mesalamine treatment for 48 patients with UC can effectively reduce the number of pathogenic bacteria such as E. coli and Enterococcus faecalis, increase the levels of beneficial bacteria like Bifidobacterium and Lactobacillus, improve gut microbial imbalance, and significantly alleviate clinical symptoms such as diarrhea, bloating, and bloody stools, outperforming those treated with Western medicine alone. The pharmacological basis of this effect is also supported by [20]. Psoralea corylifolia in Si Shen Wan contains flavonoids and coumarins, which have antioxidant and immune-regulating effects; Amomum kravanh contains volatile oils and maraparixin, which are anti-inflammatory compounds; Evodia rutaecarpa alkaloid can inhibit the release of inflammatory factors and has potential for anti-tumor activity; Schisandra chinensis polysaccharides have antioxidant, anxiety-improving, and mucosal repair functions. These drugs work synergistically, endowing Si Shen Wan with comprehensive therapeutic effects that are warming without drying, astringent without stagnation. In summary, Si Shen Wan has clear TCM theoretical basis and solid modern research support in treating ulcerative colitis of spleen-kidney yang deficiency type. It achieves overall intervention and local treatment through regulating immunity, repairing the mucosa, and modulating signaling pathways and gut microbiota, demonstrating significant clinical efficacy and good safety, making it worthy of promotion and further research.

3.1.5 Bu Zhong Yi Qi Tang

Bu Zhong Yi Qi Tang is derived from Li Dongyuan's "Treatise on Spleen and Stomach" in the Yuan Dynasty. It is a classic representative formula for treating "spleen and stomach qi deficiency, central qi sinking," composed of Astragalus, Codonopsis, Atractylodes, Fried Licorice, Tangerine Peel, Angelica, Bupleurum, and Bupleurum. In this formula, Astragalus serves as the primary herb to tonify qi and elevate yang, while Codonopsis, Atractylodes, and Licorice support the spleen and benefit qi. Bupleurum and Bupleurum elevate yang qi as secondary herbs, Angelica nourishes blood and harmonizes the camp, and Tangerine Peel regulates qi and transforms dampness. Together, they achieve the effects of tonifying qi and elevating yang, strengthening the spleen, and consolidating the exterior. This formula is used for ulcerative colitis with spleen deficiency and central qi sinking, characterized by persistent diarrhea, frequent urges to defecate, fatigue, sallow complexion, pale tongue with white coating, and weak pulse. Its therapeutic effects have been widely supported by clinical studies. Wang Wei [21] et al., through a series of observational studies on recurrent UC cases, pointed out that this formula is suitable for patients with frequent hematochezia, weak vital energy, and impaired clear yang. It can improve symptoms such as chronic diarrhea, hematochezia, and fatigue, while also alleviating the sensation of tenesmus. The core pathogenesis involves "qi deficiency failing to control" and "central qi sinking." Wang Yu [22] et al.' s prospective controlled trial showed that combining Bu Zhong Yi Qi Tang with Mesalamine for treating ulcerative proctitis was more effective than using Mesalamine alone, improving symptoms, reducing IL-33 levels, increasing IL-10 levels, and promoting the growth of beneficial bacteria like Lactobacillus and Bifidobacterium, suggesting its synergistic effects through regulating gut microbiota and immune-inflammatory pathways. Additionally, Wang Zhan Yun [23]'s research indicated that modified Bu Zhong Yi Qi Tang has an effectiveness rate of up to 89% in treating chronic colitis, significantly better than the 74% effectiveness rate of the Western medicine control group, with clinical manifestations including reduced bowel movements, disappearance of mucus and blood, and significant improvement in colonoscopy. Wang Cunhu [24] summarized clinical experience, believing that for patients with long-term illness, the main treatment of this formula should focus on qi and blood deficiency, sinking of middle qi combined with dampness. It is necessary to add herbs that promote qi circulation and resolve dampness, clear heat and detoxify, and activate blood to stop bleeding, such as dandelion, coptis, sanguisorba, and notoginseng, to achieve therapeutic effects

that are “tonifying without being greasy,” “elevating without being dry,” and “clearing without causing damage.” Modern pharmacological studies have shown that Bu Zhong Yi Qi Tang can enhance the phagocytic ability of the reticuloendothelial system, strengthen cellular immune function, regulate local mucosal immune responses, and promote intestinal mucosal repair. Its components, such as astragalus and polyphenols from codonopsis, can significantly increase the number of probiotics and regulate microbial diversity; white atractylodes and tangerine peel can increase the content of short-chain fatty acids (SCFA), improving intestinal metabolism; and herbs like cyperus and licorice can promote smooth intestinal qi flow, alleviate microcirculatory disorders and intestinal spasms, further enhancing efficacy. In summary, Bu Zhong Yi Qi Tang, as a representative formula for tonifying the body, consolidating the root, elevating yang, and strengthening the spleen, is suitable for ulcerative colitis in its progressive and remission stages with symptoms of spleen deficiency, demonstrating good efficacy and safety. Its modern mechanisms involve multiple aspects such as immune regulation, improvement of microbial flora, anti-inflammatory protection of the mucosa, providing strong theoretical and practical support for the holistic treatment of UC in traditional Chinese medicine.

4. Conclusion

Ulcerative colitis is a chronic intestinal disease with complex etiology and prone to recurrence. Although it does not have a specific name in traditional Chinese medicine, the theory system and differential diagnosis treatment approach for this condition have been well-established through the analysis of its clinical manifestations and pathogenic characteristics. This article systematically explores the application and modern research foundation of five classic formulas in the treatment of UC, based on an overview of their TCM etiology, pathogenesis, and common syndromes. Studies show that TCM can play a positive role in treating UC by regulating immune function, repairing the mucosal barrier, and improving gut microbiota, among other mechanisms. In the future, TCM holds great potential in the treatment of ulcerative colitis, requiring further clinical research, optimization of diagnostic criteria, and modernization to promote its application and development in global inflammatory bowel disease management.

References

[1] Du L, Ha C. Epidemiology and Pathogenesis of Ulcerative Colitis. Gastroenterol Clin North Am. 2020; 49(4): 643-654.

[2] Wangchuk P, Yeshi K, Loukas A. Ulcerative colitis: clinical biomarkers, therapeutic targets, and emerging treatments. Trends Pharmacol Sci. 2024; 45(10): 892-903.

[3] Le Berre C, Honap S, Peyrin-Biroulet L. Ulcerative colitis. Lancet. 2023;402(10401):571-584.

[4] Liu Yuchen, Yao Junren, Lin Jiang. Research progress on syndrome differentiation of ulcerative colitis in traditional Chinese medicine [J]. Modern Journal of Integrated Traditional Chinese and Western Medicine, 2024, 33(15): 2185-2190.

[5] Qin Jingshen, Zhang Xinyue, Zhu Ziming, et al. Review on syndrome elements and syndrome classification of ulcerative colitis in traditional Chinese medicine [J]. Journal of Shaanxi University of Chinese Medicine, 2024, 47(04): 7-11.

[6] Cao Xia, Qiu Rong, Tao Yunping, et al. Effectiveness and mechanism of Shenling Baizhu San in the treatment of ulcerative colitis based on the regulation of Th17/Treg balance [J/OL]. Chinese Medicinal Materials, 2025, (01): 237-241 [2025-04-20]. https://doi.org/10.13863/j.issn1001-4454.2025.01.039.

[7] Gao Liang, Lai Shu, Zeng Jing, et al. Clinical study on Shenling Baizhu San combined with enteral nutrition in treating ulcerative colitis with spleen deficiency and dampness accumulation syndrome [J]. Chinese Journal of Integrated Traditional and Western Medicine on Digestion, 2025, 33(04): 455-459.

[8] Hong Jinping. Study on the effect of Shenling Baizhu San combined with mesalazine in the treatment of patients with ulcerative colitis [J]. Modern Medicine and Health Research Electronic Journal, 2024, 8(18): 114-116.

[9] Jiang Li, Zhang Wentong, Xiao Tong, et al. Material basis, mechanism and safety evaluation of Shenling Baizhu San against ulcerative colitis [J]. Journal of Wuhan University (Natural Science Edition), 2024, 70(02): 236-252.

[10] Liu Yang. Clinical observation of Taohua Decoction combined with mesalazine in the treatment of ulcerative colitis (spleen-kidney yang deficiency type) [D]. Hebei University, 2022.

[11] Ji Wenpeng. Clinical observation on 52 cases of ulcerative colitis treated with modified Taohua Decoction [J]. Chinese Medicine Research, 2011, 24(09): 39-41.

[12] Lu Aiyangzi, Gao Hui, Shen Haoran, et al. Systematic review on the efficacy of Taohua Decoction in the treatment of ulcerative colitis [J]. China Modern Doctor, 2024, 62(11): 63-68.

[13] Wang Meng, Yu Yongduo. Analysis on the therapeutic approach of Baitouweng Decoction for ulcerative colitis based on the theory of turbid toxin accumulation in the intestine [J]. Journal of Practical Traditional Chinese Internal Medicine, 2025, 39(02): 86-88.

[14] Zhu Weina, Ma Chunhua, Ruan Jie, et al. Baitouweng Decoction relieves ulcerative colitis via HMGB1 - regulated Nrf2/HO-1 signaling pathway [J]. Chinese Pharmacological Bulletin, 2025, 41(01): 186-192.

[15] Shi Lijing, Lu Hai, Xu Hui, et al. Clinical efficacy of modified Baitouweng Decoction on ulcerative colitis (heat toxin flourishing type) and its effects on inflammatory cytokines and intestinal flora [J]. Sichuan Journal of Traditional Chinese Medicine, 2024, 42(10): 124-127.

[16] Rao Chunmei, Li Zuoyong, Yang Guoqing, et al. Research progress on Baitouweng Decoction in the treatment of ulcerative colitis [J]. Journal of Yunnan Traditional Chinese Medicine and Materia Medica, 2024, 45(09): 84-90.

[17] Pan Qihong, Liu Yang, Wei Shaofeng. Mechanism of Sishen Pill in regulating immune balance and inflammatory cytokines in ulcerative colitis via Th17/Treg signaling pathway [J/OL]. Journal of

Traditional Chinese Medicine, 1-7 [2025-04-20]. http://kns.cnki.net/kcms/detail/21.1546.R.20241121.0955.012.html.

[18] Song Lizhao, Cheng Nian, Deng Yifei, et al. Regulatory effect of Sishen Pill on Numb/Notch signaling pathway in colonic mucosa of mice with colitis [J]. Pharmacology and Clinics of Chinese Materia Medica, 2025, 41(02): 16-20.

[19] Ma Hang. Clinical observation of 48 cases of ulcerative colitis treated with Sishen Pill combined with mesalazine [J]. Chinese Journal of Coloproctology, 2024, 44(09): 50-52.

[20] Ma Liya, Li Meimei, Huang Yuzhuo, et al. Overview of research on Sishen Pill in the treatment of ulcerative colitis [J]. Journal of Clinical Traditional Chinese Medicine, 2024, 36(05): 987-994.

[21] Wang Wei, Wang Jing. Discussion on the treatment of recurrent ulcerative colitis with Buzhong Yiqi Decoction [J]. Chinese Acupuncture Electronic Journal, 2021, 10(02): 86-88.

[22] Wang Yu. Clinical observation on mesalazine combined with Buzhong Yiqi Decoction in the treatment of chronic ulcerative proctitis [J]. Journal of Colorectal and Anal Surgery, 2019, 25(01): 91-95.

[23] Wang Zhanyun. Clinical observation on 120 cases of chronic colitis treated with Buzhong Yiqi Decoction [J]. Contemporary Medicine, 2010, 16(12): 153.

[24] Wang Cunhu. Clinical experience of treating ulcerative colitis with modified Buzhong Yiqi Decoction [J]. China Community Physician (Medical Edition), 2012, 14(07): 6.