

Chapter

Traditional Chinese Medicine Treatment for Inflammatory Bowel Disease

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Abstract

Inflammatory bowel disease (IBD), primarily comprising Crohn's disease (CD) and ulcerative colitis (UC), is a chronic inflammatory condition of the gut whose aetiology remains incompletely understood. Globally, the incidence of IBD continues to rise, presenting numerous challenges for clinical management. Against this backdrop, traditional Chinese medicine (TCM), leveraging its theoretical strengths of holistic perspective and syndrome differentiation-based treatment, demonstrates considerable application potential through its multi-component, multi-target characteristics. This includes regulating immune responses, exerting anti-inflammatory effects, and repairing damaged intestinal barriers. This chapter aims to systematically review advances in TCM research on IBD, encompassing diagnosis, pathogenesis, syndrome differentiation, therapeutic approaches, and application progress in IBD treatment. It further explores potential mechanisms of action, seeking to provide additional effective treatment options for IBD and promote deeper integration between traditional medicine and modern science. In conclusion, this chapter underscores the potential of TCM as a holistic and multi-targeted approach for IBD management, offering valuable insights for integrating traditional wisdom with modern gastroenterology.

Keywords: inflammatory bowel disease, traditional Chinese medicine, acupuncture, Moxbustion, treatment, pathogenesis

1. Introduction

IBD is a group of chronic, recurrent inflammatory bowel disorders of unknown aetiology, primarily comprising two subtypes: CD and UC [1]. Among these, CD is characterised by transmural inflammation affecting the entire digestive tract from mouth to anus, with a predilection for the terminal ileum and colon. Lesions exhibit a discontinuous distribution. The most common symptom is abdominal pain, typically presenting as persistent dull ache or cramping pain in the right lower abdomen or around the umbilicus, worsening after meals or defecation. Complications frequently include strictures and fistulae. UC lesions are confined to the colonic mucosa and submucosa, exhibiting a continuous distribution. The most

common symptom is diarrhoea, typically presenting as frequent mucopurulent bloody stools. This is often accompanied by tenesmus and paroxysmal colicky pain in the left lower abdomen, which may temporarily subside after defecation [2].

The prevalence of IBD in China is on the rise [3]. Conventional medical treatment for IBD primarily relies on immunosuppressants, glucocorticoids, and biologics. However, due to the disease's tendency to relapse, long-term medication can lead to drug resistance. Furthermore, significant side effects and high costs considerably diminish the clinical efficacy of these treatments [4]. Consequently, traditional Chinese medicine TCM approaches to IBD treatment are guided by TCM principles, emphasizing the holistic concept of 'correspondence between heaven and man'. This approach offers distinct advantages in improving constitution, preventing recurrence, reducing side effects, and enhancing tolerance. It is widely accepted by patients in clinical practice, with related research increasingly prevalent [5]. This section's literature review aims to systematically collate contemporary research and classical theories concerning TCM treatment for IBD. To comprehensively cover the evidence, we conducted searches through PubMed, CNKI, and SinoMed using keyword combinations such 'IBD', 'traditional Chinese medicine', 'acupuncture', 'moxibustion', and 'treatment'. The search scope covered articles published within the last five years. The article selection criteria included relevant literature, reviews, and authoritative works concerning the pathogenesis of IBD, clinical classification, and modern mechanism research. Ultimately, the literature most pertinent to this chapter was selected as the core basis for citation.

2. Western medical diagnosis of IBD

There is no single gold standard for diagnosing IBD. A comprehensive assessment is required, incorporating clinical presentation, endoscopy, imaging, pathology, and laboratory tests, whilst excluding other infectious or non-infectious intestinal disorders. Clinically, practitioners conduct detailed inquiries regarding diarrhoea, abdominal pain, weight changes, and fever. It is observe extraintestinal manifestations such as arthritis, cutaneous lesions, ocular involvement, and hepatobiliary disease [6], alongside assessing the patient's medical history, disease duration, family history, and smoking history.

2.1 Endoscopy

Endoscopy with biopsy is pivotal for establishing diagnosis. The endoscope enables direct visualisation of the intestinal tract, allowing assessment of disease severity and, when necessary, tissue sampling. This provides microscopic evaluation via mucosal biopsy, significantly aiding IBD diagnosis [7]. Endoscopic features of CD: segmental, asymmetrical distribution of lesions; presence of aphthous ulcers, longitudinal ulcers, and pebble-like appearance; involvement possible at any intestinal segment. Endoscopic features of UC: inflammation commencing in the rectum, presenting as continuous, diffuse distribution; mucosal congestion, oedema erosion, ulceration, and pseudo polypoid formation [8].

2.2 Imaging investigations

Intestinal ultrasound (IUS), computed tomography (CT), and magnetic resonance enterography (MRE) are commonly employed for IBD assessment, each possessing distinct advantages and limitations. Ultrasound is relatively inexpensive and provides immediate evaluation; however, as a screening tool, it struggles to assess the entire length of the colon and small intestine. CT provides direct visualisation of intestinal wall thickening, mesenteric oedema, lymphadenopathy, inflammatory masses, and abscesses [9]. Like CT, MRE offers cross-sectional imaging capability, enabling assessment of extra-luminal and extra-intestinal manifestations of IBD. This is a significant advantage over endoscopic techniques, particularly for evaluating the entire bowel in cases of stricture or severe inflammation.

2.3 Pathological examination

Endoscopically obtained tissue biopsies represent the gold standard for definitive diagnosis. Confirmation of UC reveals inflammation predominantly confined to the mucosa and submucosa, with crypt abscesses and reduced goblet cell numbers. Confirmation of CD demonstrates transmural inflammation, non-caseating granulomas (highly specific but with an approximately 50% detection rate), and fissure-like ulcers [10].

2.4 Laboratory tests

Laboratory markers are employed for diagnostic and differential diagnostic purposes, assessing disease activity and complication risks, predicting recurrence, and monitoring treatment efficacy. Laboratory investigations include faecal examinations. Research indicates favourable outcomes when faecal calprotectin is utilised in CD and UC [11]. Calprotectin is a highly significant non-invasive test capable of distinguishing IBD from functional bowel disorders and is employed to monitor disease activity. In addition to stool analysis, blood tests primarily assess inflammatory markers such as C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR), which are frequently elevated during active disease phases. Complete blood counts may also be examined to observe white blood cell counts, platelet levels, and albumin. Reduced albumin levels may be detected during periods of inflammation [12].

2.5 Applications of artificial intelligence

Over the past decade, artificial intelligence technology has revolutionised the field of gastroenterology. Understanding AI's role in endoscopy, histology, and imaging remains nascent, yet it holds potential to streamline clinical workflows through automated algorithms, enhance detection accuracy, and reduce intra- and inter-observer variability. Currently, eight studies have explored AI for characterising CD disease activity [13]. For instance, Lamash et al. developed a semi-automated supervised 3D-CNN algorithm requiring only author-placed seed points to segment the intestinal wall and lumen, thereby enabling measurement of luminal radius and intestinal wall thickness [14].

3. Conventional medical treatment

The therapeutic objectives for IBD encompass inducing and sustaining clinical remission alongside mucosal healing, enhancing quality of life, reducing complications and the need for hospitalisation or surgery, and lowering the long-term risk of malignant transformation.

Pharmacological interventions include 5-aminosalicylic acid (5-ASA) derivatives, such as mesalazine. These are primarily employed for inducing and maintaining remission in mild to moderate UC, though their efficacy for CD is limited. Corticosteroids, such as budesonide and prednisolone, are employed for moderate to severe active disease. Immunosuppressants, like azathioprine, are used to maintain remission after steroid tapering or combined with biologics to reduce antibody production. Biologics represent targeted therapy for IBD and constitute a milestone in managing moderate disease. For all patients, correcting malnutrition and supplementing vitamins and trace elements are also crucial therapeutic approaches. Surgical intervention should be considered when complications arise or drug treatment proves inadequate [15].

Research indicates that beyond specific pathogenic factor expansion in IBD, IBD-associated dysbiosis is characterised by depletion of symbiotic substances, particularly short-chain fatty acids (SCFAs) [16], which are vital for promoting microbial homeostasis and anti-inflammatory metabolite production. Therefore, prebiotic and panbiotic optimisation may be employed to treat IBD. Recent research further indicates that nanomedicine delivery holds numerous innovative insights for IBD therapy, with intelligent nanocarriers capable of being engineered to respond to specific pathways. Furthermore, nanomedicines can significantly enhance drug uptake efficiency by precisely targeting specific receptors on macrophage surfaces, thereby increasing therapeutic specificity while minimising interference with normal cells. This approach fundamentally modulates macrophage polarisation states, presenting novel therapeutic opportunities for IBD management [18].

4. Conventional medical treatment

IBD, encompassing UC and CD, lacks corresponding classical references in TCM literature. Based on symptoms such as diarrhoea, abdominal pain, and bloody mucus-containing stools, it may be categorised under syndromes including ‘intestinal toxin’, ‘dysentery’, ‘red percolation’, ‘diarrhea’, ‘intestinal pi’, and ‘abdominal pain’. In some patients presenting with constipation, it may be classified as ‘constipation’. Furthermore, based on endoscopic findings and complications such as abdominal signs, it may also fall under ‘intestinal abscess’, ‘anal abscess’, ‘anal fistula’, or ‘abdominal mass’.

As stated in *Experiential Insights from the Surgery Department*, “When the yin collaterals are injured . . . leading to loss of normal pathway of nutrient-blood, which permeates into the large intestine and descends, it transforms into intestinal toxin.”

Ancient references to ‘dysentery’, characterized by bloody and purulent stools, align closely with the symptoms of IBD. For example, ‘small intestine diarrhea’ presents with bloody and purulent stools accompanied by lower abdominal pain. Such descriptions provide evidence for the classification of IBD within TCM disease frameworks [19].

In summary, while there is no unified TCM disease name for IBD, TCM practice adheres to the principle of ‘treating different diseases with the same method and treating the same disease with different methods’. Thus, TCM focuses not solely on the disease name but emphasizes the underlying etiology and pathogenesis [20].

In TCM, the disease location of IBD is primarily attributed to the large intestine, characterised by a pathological nature of deficiency in origin and excess in manifestation. Here, spleen-stomach deficiency serving as the fundamental root, while dampness, blood stasis, phlegm-turbidity, accumulation stagnation, and other turbid pathogens retained internally constitute the superficial manifestations. Historically, CD lacked a standardised TCM syndrome differentiation framework, presenting persistent challenges in pattern harmonisation. The 2024 Consensus has addressed this by establishing seven defined syndrome patterns for CD: intestinal dampness-heat, dampness-heat and blood stasis interbinding, spleen deficiency with dampness encumbrance, cold-heat complex, Qi and blood deficiency, spleen-kidney yang deficiency, and kidney essence deficiency. These patterns are recognised to reflect the clinical characteristics associated with disease activity and progression in CD. Furthermore, according to the *Guidelines for TCM Diagnosis and Treatment of Ulcerative Colitis, a Common Digestive System Disease*, the syndrome differentiation for UC encompasses large intestine dampness-heat, intense heat-toxin, spleen deficiency with dampness encumbrance, cold-heat complex, liver Qi stagnation and spleen deficiency, spleen-kidney yang deficiency, as well as yin and blood deficiency patterns [22].

5. Aetiology and pathogenesis of IBD in TCM

TCM posits that spleen-stomach deficiency constitutes the fundamental pathological basis for the onset of IBD. The primary pathogenesis involves a constellation of factors – including constitutional weakness, exposure to exogenous pathogens, dietary improprieties, and emotional disturbances – that collectively lead to Qi deficiency of the spleen. Consequently, the spleen fails in its transporting function, resulting in the endogenous accumulation of dampness-turbidity. This turbid dampness may transform into dampness-heat, which then pours downward into the intestines. Alternatively, the stagnation of Qi and blood may obstruct the intestinal tract, disrupting the normal functions of transmission and transformation by the large and small intestines. This disruption leads to the derangement of ascending and descending functions and the failure to separate the clear from the turbid, ultimately manifesting as diarrhoea. The spleen and stomach, residing together in the middle jiao, are interiorly-exteriorly related and functionally inseparable [23].

5.1 IBD based on the theory of ‘Six Constrictions’

The theory of the ‘Six Constrictions’ was developed by Zhu Zhenheng from the foundational concept of ‘Five Constrictions’ articulated in the *Su Wen · Liu Yuan Zheng Ji Da Lun Pian* [24]: ‘Wood Constriction should be coursed, Fire Constriction should be emitted, Earth Constriction should be seized, Metal Constriction should be drained; Water Constriction should be repressed’.

Initially, Qi Constriction acts as the primary predisposing factor for various diseases. Since the disease location of IBD is the large intestine, and liver diseases should be treated by coursing the Large Intestine, contemporary research has consequently proposed the ‘gut-liver axis’ theory. Adverse emotional factors are believed to influence the enteric nervous system via the ‘brain-gut axis’, activating mast cells, leading to immune imbalance, triggering intestinal inflammation, and ultimately progressing to IBD [25].

Subsequently, Phlegm Constriction, Dampness Constriction, and Food Constriction lie latent, awaiting manifestation. The adage ‘the obese often have phlegm’ is pertinent here, as obesity is a recognised risk factor for IBD onset. Long-term high-fat dietary habits exacerbate the condition by elevating inflammatory cytokine levels and induce phlegm pattern formation. Furthermore, individuals with a phlegm-dampness constitution exhibit distinct gut microbiota profiles; their intestinal dysbiosis is a significant factor in predisposing to IBD [26].

Following this, Fire Constriction manifests in the flare-up of intestinal inflammation. The stagnation of Qi dynamics gives rise to excess fire, which, over time, may transition from excess to deficiency, becoming deficient fire. Together, they constitute Fire Constriction, clinically presenting as intestinal inflammation and representing the core pathogenesis during the active stage of IBD. The intermingling of Fire Constriction and Dampness Constriction alters tryptophan metabolism, inducing gut microbiota disruption, which accounts for the high relapse rate in IBD [27].

Finally, prolonged Blood Constriction may lead to the formation of accumulations. Chronic Qi Constriction impedes blood flow, generating internal blood stasis, thus forming Blood Constriction. Over a prolonged duration, and within a phlegm-dampness constitution, there is a risk that Blood Constriction may transform into accumulations and give rise to cancerous toxins, marking the progression from IBD to inflammation-associated colorectal cancer [28].

5.2 IBD based on the theory of ‘deficiency, toxin, and stasis’

Deficiency, particularly spleen deficiency, constitutes the root pathogenesis of IBD. Prolonged illness may further involve the kidney. The spleen, regarded as the ‘granary official’ and the source of Qi and blood generation, becomes impaired due to habitual factors such as improper diet (e.g. consumption of rich, greasy foods), irregular daily routines, or overexertion. These lead to dysfunction of the spleen in transportation and transformation, resulting in the endogenous accumulation of dampness. Over time, this dampness stagnates and generates heat, forming dampness-heat that descends into the intestines. This process damages the intestinal collaterals, leading to ulceration. Thus, the descent of damp-heat pathogenic toxin into the intestines represents the secondary manifestation (the ‘branch’) of IBD. Moreover, inherent constitutional weakness in patients means that spleen deficiency serves as the root. This creates a vicious cycle wherein deficiency of healthy Qi and excess of pathogenic factors perpetuate each other, resulting in a prolonged clinical course and symptom recurrence [29].

Stasis, referring here primarily to blood stasis, is both a pathological product throughout the course of IBD and a critical secondary pathogenic factor. It is key to

the persistent and refractory nature of the disease. The stagnation of static blood in the intestinal tract disrupts the normal flow of Qi and blood, impedes intestinal self-repair, and causes continuous damage to the viscera. Interacting with other pathological products, it further consumes healthy Qi, complicating treatment.

The interplay of dampness, stasis, and toxin converges in the intestines, damaging the adipose membrane and blood collaterals, and giving rise to pus-filled sores. Notably, dampness, due to its viscous, sticky, and heavy nature, tends to linger in the viscera and channels. This underlying mechanism explains why IBD is frequently accompanied by extraintestinal manifestations such as peripheral arthritis, ankylosing spondylitis [30], and systemic lupus erythematosus.

5.3 IBD, based on the phrase ‘sudden pouring diarrhoea with tenesmus belongs to heat’

The statement ‘Sudden pouring diarrhoea with tenesmus belongs to heat’ originates from the Nineteen Patho mechanisms in the *Su Wen Zhi Zhen Yao Da Lun*. Here, ‘sudden pouring’ refers to acute, violent diarrhoea, while ‘tenesmus’ indicates urgency and a feeling of incomplete evacuation during defecation.

Professor He Yongheng, integrating discussions from past medical scholars and his own clinical experience [31], proposes that the Patho mechanism of IBD frequently pertains to dampness-heat, liver heat, and heat-toxin. Furthermore, as the stomach and large intestine belong to the Yangming Channel, which is characterised by abundant Qi and blood and a propensity for yang heat, the large intestine dampness-heat pattern and spleen-stomach heat pattern are commonly observed clinically in IBD. The descent of dampness-heat impairs the transporting function of the large intestine and damages its blood collaterals, leading to diarrhoea and dysentery with pus and blood.

Research indicates that IBD is often comorbid with certain hepatobiliary and pancreatic diseases, many of which are inflammatory [32]. In TCM, inflammatory diseases largely fall under the category of ‘heat patterns’. This observation has led modern researchers to propose the ‘gut-liver axis’ theory, which intriguingly aligns with the TCM concept of ‘the Heart and Gallbladder being connected, the Liver and Large Intestine being interrelated, and the Spleen and Small Intestine communicating’.

Based on these theories, hot and humid is most frequently seen in the acute stage of IBD. During remission, hot and humid is generally milder, often resulting from prolonged illness and emotional constraint transforming into fire. In such cases, the typical symptoms of severe sudden diarrhoea, tenesmus, and bloody purulent stools are not prominent; instead, discomfort or pain in the abdomen and hypochondriac regions due to Qi dynamic obstruction is more common. The heat-toxin pattern is predominantly observed in the acute phase and is rare in remission, only occurring when heat-toxin lingers persistently. This state is often accompanied by spleen-kidney deficiency and blood stasis obstruction, leading to a protracted and refractory condition. The reckless movement of heat-toxin represents a relatively severe pathological state [33].

5.4 IBD based on the theory of ‘Gallbladder Qi’ from the *Huangdi Neijing*

The theoretical foundation of the ‘Gallbladder Qi Theory’ can be traced to the *Huangdi Neijing*, in which multiple chapters reflect the concept of ‘emphasising the

gallbladder’. The gallbladder meridian of foot-shaoyang internally connects with the yin meridians and reaches the zang-fu organs, while externally it extends to the yang meridians and the body surface. It facilitates both the descent of heart-yang and the ascent of kidney-Qi, thereby governing the pivotal mechanism of ascending and descending and regulating internal-external communication, exhibiting a broad capacity for holistic regulation.

Thus, the gallbladder serves as the pivot of shaoyang, managing the opening and closing of yang Qi. ‘gallbladder-intestinal disharmony’ is closely linked to the onset and progression of IBD. This pathomechanism persists throughout the disease course. If gallbladder Qi fails to ascend, the distribution of essential nutrients is impaired. When the pivotal function of gallbladder Qi is dysfunctional, the storage and excretion of bile become disordered, leading to abnormal separation of the clear and turbid in the triple burner, resulting in symptoms such as abdominal pain and changes in stool frequency or consistency.

Bile and bile acid metabolism are implicated in this process and influence gut microbiota homeostasis, which is closely associated with IBD progression. Furthermore, the failure of gallbladder Qi to ascend undermines the root of Qi movement. Both the liver and gallbladder belong to wood in the five phases and are physiologically interdependent; together, they regulate Qi dynamics. Gallbladder Qi supports the spleen in sending the clear upward, while bile descends with stomach Qi. The harmonious ascent of the clear and descent of the turbid ensures the orderly raising of spleen Qi and lowering of stomach Qi. Modern medical research indicates that gastrointestinal motility is a crucial manifestation of gallbladder Qi function. A majority of IBD patients exhibit at least one form of gastrointestinal dysmotility, which may persist even during disease remission. Studies have found that bile acids can modulate overall gastrointestinal motility by activating G protein-coupled receptors [34].

6. TCM treatment of IBD based on theoretical frameworks

TCM treatment of IBD emphasises pattern differentiation and treatment, addressing both internal and external aspects. Adhering to this principle and based on the syndrome patterns of UC and CD, common treatment approaches include clearing the intestines and resolving dampness, regulating Qi and harmonizing blood, fortifying the spleen and softening the liver, and expelling dampness to stop diarrhoea. For CD, which is considered to have dampness at its core and an essence of ‘spleen-stomach deficiency as the root, with phlegm, dampness, heat, and stasis as the manifestations’, emphasis is placed on methods such as activating the spleen to transform dampness and soothing the liver to fortify the spleen [35].

6.1 Treating IBD from the perspective of the ‘Six Constrictions’

Based on the previous pathological analysis of IBD, treatment strategies can be selected according to the disease mechanism. Interpreting the disease’s progression through the lens of the Six Constrictions allows for targeting the aetiology during the latent phase with Qi-moving, liver-soothing, and constraint-resolving methods.

Qi constriction pattern: manifestations include diarrhoea, abdominal pain, variable stool consistency (sometimes dry, sometimes loose), a red tongue with thin

white coating, and a wiry pulse. The treatment principle is to soothe the liver and resolve constraint. The formula Tong Xie Yao Fang is used to soften the liver, fortify the spleen, and halt diarrhoea. For pronounced diarrhoea, Sheng Ma (*Cimicifuga Rhizoma*) is added. For abdominal pain, Bai Shao (*Paeoniae Radix Alba*) is used in a larger dose, supplemented with Mu Xiang (*Aucklandiae Radix*) and Yan Hu Suo (*Corydalis yanhusuo*) to move Qi and alleviate pain. For prolonged emotional constraint, (*Citri Sarcodactylis Fructus*) and Xiang Fu (*Rhizoma cyperi*) are added to soothe the liver and regulate Qi. Clinicians should also assist patients in managing negative emotions and maintaining a positive mood.

Phlegm, dampness, and food constriction patterns in latent phase: manifestations include clear, watery diarrhoea, epigastric fullness, heaviness in the head and body, a preference for rich, sweet foods, a white, greasy tongue coating, and a soggy pulse. The treatment principle is to fortify the spleen, resolve phlegm, and dispel dampness. The formula Xiang Sha Liu Jun Zi Tang is commonly used. For indigestion with abdominal distension, Mai Ya (Malt) and Lai Fu Zi (*Semen Raphani*) are added. For fever, Huang Qin (*Radix Scutellariae*) and Huang Lian (*Coptis chinensis*) are added to clear heat and dry dampness. Studies indicate that polysaccharides in these herbs can improve the ratio of beneficial to harmful bacteria, restoring gut microbiota balance [36].

Fire constriction pattern in active phase: manifestations include tenesmus, constant desire to defecate, dysentery with red and white discharge, a red tongue with yellow, greasy or dry coating, and a slippery, rapid pulse. The treatment principle is to clear heat and dispel dampness. Modified Bai Tou Weng Tang (*Pulsatilla* Decoction) or Shao Yao Tang (*Peony* Decoction) are used clinically. For intense heat in the blood aspect, Dan Pi (*Cortex Moutan*) and Chi Shao (*Radix Paeoniae Rubra*) are added to cool the blood. Research shows that key active flavonoids in the principal herbs of Shao Yao Tang – such as wogonin (M9) and verbascoside (M10) from Huang Qin, and berberine (M7) and rhamnetin (M8) from Huang Lian – exert multi-faceted effects in IBD treatment by modulating key pathways like MAPK in a ‘multi-component, multi-target, multi-pathway’ manner [37]. Bai Tou Weng Tang regulates intestinal immunity and energy metabolism via axes such as the phosphatidylinositol 3-kinase/protein kinase B (PI3K/Akt) signalling pathway, thereby exerting its effects of clearing heat, drying dampness, checking diarrhoea, and slowing IBD progression [38].

Blood constriction pattern: manifestations include stabbing abdominal pain, mucoid and bloody stools, a dark purple tongue, a thick, greasy coating, and a thin, hesitant pulse. The treatment principle is to quicken the blood, dispel stasis, and reduce accumulations. Modified Ge Xia Zhu Yu Tang is used clinically [39]. Studies show this formula can regulate the tumour necrosis factor (TNF) signalling pathway, antagonise ligand-receptor binding activation, and inhibit the expression of inflammatory factors such as TNF- α , intercellular adhesion molecule-1 (ICAM-1), and interleukin-6 (IL-6), thereby fulfilling its function of activating blood and resolving stasis.

6.2 Treatment of IBD from the perspectives of deficiency, toxin, and stasis

Treatment based on deficiency: the primary approach is to regulate the spleen, reinforce healthy Qi, and consolidate the root. Strengthening the spleen and stabilizing the foundation are central to treatment. Impaired spleen transport

function manifests as diarrhea and loose stools. Treatment aims to invigorate the spleen, uplift yang, and eliminate dampness to restore normal spleen function. Commonly used formulas include Li Zhong Wan (regulate the middle decoction), Liu Jun Zi Tang (six gentlemen decoction), Bu Zhong Yi Qi Tang (tonify the middle and augment qi decoction), Shen Ling Bai Zhu San (ginseng, poria, and atracylodes macrocephala powder), and Huang Qi Jian Zhong Tang (astragalus fortify the middle decoction), tailored to the patient's pattern. If the disease progresses to a deficiency of both the spleen and kidney, modified formulations such as Si Shen Wan (Four Spirits Pill) or Zhen Ren Yang Zang Tang (true man's decoction to nourish the organs) may be employed. Modern pharmacological studies indicate that Huang Qi (astragalus) enhances immune function, promotes immune homeostasis, and contributes to the repair of the mucosal barrier and maintenance of intestinal environmental stability. Dang Shen (codonopsis) has been shown to improve gastrointestinal motility and mitigate ulcer formation [40].

Treatment based on toxin: eliminating dampness-toxin is essential, as dampness-toxin is a key pathogenic factor in IBD, persisting throughout the disease course. Dampness, a yin pathogen, is heavy, sticky, and obstructive, impeding Qi and blood circulation. Over time, it descends to the intestinal collaterals, leading to recurrent and refractory IBD. Treatment focuses on clearing the intestines, transforming dampness, harmonizing Qi and blood, and detoxifying to reduce inflammation. Commonly used formulas include Shao Yao Tang (peony decoction), Ge Gen Qin Lian Tang (kudzu, scutellaria, and coptis decoction), and Bai Tou Weng Tang, modified according to clinical presentation. Pharmacological research demonstrates that Bai Tou Weng Tang and Shao Yao Tang inhibit inflammatory responses, repair intestinal epithelial tissue, and protect the mechanical barrier of the intestinal mucosa [41].

Treatment based on stasis: dampness-heat leads to stasis, and stasis-heat damages the collaterals, resulting in ulceration and bleeding – a critical pathological mechanism in IBD. Clinical differentiation is based on the colour of bloody stools: fresh red blood suggests the addition of Dan Pi (Cortex Moutan) and Chi Shao (Red Peony Root), while dark-coloured blood indicates the use of Zi Cao (Arnebia Root) and Qian Cao (Madder Root). Patients may also experience dry mouth and thirst. Modern pharmacological studies suggest that herbs promoting blood circulation and resolving stasis reduce capillary permeability, alleviate inflammation, improve blood viscosity and microcirculation, inhibit platelet aggregation, and prevent thrombus formation [42].

6.3 Treatment of IBD based on the principle 'sudden pouring diarrhoea with tenesmus belongs to heat'

Treatment from the perspective of heat involves addressing the frequent presence of dampness-heat, liver heat, and heat-toxin in IBD, utilising both internal and external approaches. Internal treatment focuses primarily on clearing dampness-heat, reducing liver heat, and resolving heat-toxin, supplemented by regulating the spleen and stomach, harmonising Qi and blood, and transforming blood stasis. External treatment aims to clear heat, resolve toxicity, and cool the blood to remove toxicity. Clinically, if dampness is more severe than heat, modified San Ren Tang is used. For dampness-heat in the liver channel, Long Dan Xie Gan Tang is modified. For intense heat-toxin, it is often treated according to the surgical principles for

‘abscess’ and ‘sore’, using modified Wu Wei Xiao Du Yin, Huang Lian Jie Du Tang, or Wu Shen Tang. For mucoid and bloody stools, Bai Tou Weng Tang or Di Yu San are commonly employed [43].

6.4 Treatment of IBD based on the ‘gallbladder Qi’ theory from the *Huangdi Neijing*

Guided by the core pathological concept of ‘gallbladder Qi disharmony’, the fundamental treatment approach is to pivot and regulate Shaoyang through methods such as raising yang, clearing the gallbladder, dispersing gallbladder, consolidating the gallbladder, and supplementing the gallbladder. This is discussed from the perspectives of soothing the liver, transforming turbidity, harmonising the middle, calming the spirit, and warming the kidney.

Gallbladder stasis and liver constriction: raising gallbladder Qi and soothing the liver. Clinical manifestations of wood Qi depression and sinking include hypochondriac distension, abdominal pain, and diarrhoea. Modified Tong Xie Yao Fang combined with Si Ni San are used to raise gallbladder Qi and soothe the liver. Studies indicate that modified formulations of these decoctions can significantly improve clinical symptoms in IBD, potentially through mechanisms involving the regulation of Th1/Th2 cell balance, activation of immune function, and inhibition of MCP-1 and TGF- β 1 secretion [44].

Gallbladder fire harassing the lung: clearing the gallbladder and transforming turbidity. Impaired lung function in descending and purifying may prevent body fluids from moistening the intestines, leading to difficulty defecating or even bloody stools. Modified Zuo Jin Wan, combined with Huang Qi Jie Geng Tang, are used to clear the gallbladder and transform turbidity. Research has found that Zuo Jin Wan restores the balance of inflammatory factors in IBD colon tissue by modulating gut microbiota composition and regulating multiple signalling pathways. Modified Zuo Jin Wan, combined with Huang Qi Jie Geng Tang, are used to clear the gallbladder and transform turbidity. Research has found that Zuo Jin Wan restores the balance of inflammatory factors in IBD colon tissue by modulating gut microbiota composition and regulating multiple signalling pathways [45].

Gallbladder stasis and spleen deficiency: dispersing gallbladder and harmonising the middle. dysfunction of the gallbladder’s uprising nature can directly affect the spleen and stomach, potentially causing a bitter taste in the mouth, vomiting, and failure of the spleen to send the clear upward. Attention to the ascending and descending of spleen-stomach Qi is required. Modified Ban Xia Xie Xin Tang serves as the base formula. Studies confirm that multiple components in Ban Xia Xie Xin Tang exert therapeutic effects in IBD by regulating cell apoptosis signaling pathways and modulating bile acid levels, achieved through the coordination of the gallbladder and spleen [46].

Gallbladder cold and kidney depletion: supplementing the gallbladder and warming the kidney. Failure of the gallbladder and kidney to mutually astringe, store, and regulate each other, with prolonged cold of kidney water alone, can lead to systemic disorders, emaciation, cold body and limbs, and multi-system involvement (e.g. skin and mucosa), often seen in the late stages of IBD. Modified Wen Dan Tang combined with Si Shen Wan are used to supplement the gallbladder and warm the kidney. Research suggests that Wen Dan Tang can effectively alleviate clinical symptoms in chronic IBD [47], and Si Shen Wan directly participates in lipoprotein

metabolism and systemically regulates multiple bodily systems, aligning with the multi-factorial mechanisms underlying IBD.

7. Additional therapeutic approaches for IBD

7.1 Acupuncture therapy

Throughout history, acupuncture has been an integral component of external treatment methods in TCM. It embodies the TCM principles of holism and pattern differentiation. Research has demonstrated that acupuncture yields favourable outcomes in the treatment of IBD. It modulates immune function and provides effective regulation and intervention in gastrointestinal disorders, exhibiting notable therapeutic efficacy. Additionally, acupuncture inhibits apoptosis and the expression of key proteins in nuclear transcription pathways, thereby alleviating clinical symptoms.

Clinical studies suggest that acupuncture may also serve as a valuable complementary intervention in the management of coeliac disease (CD). The treatment protocol involves needling at Zhongwan (CV12), bilateral Shangjuxu (ST37), Sanyinjiao (SP6), Gongsun (SP4), Taichong (LR3), Taixi (KI3), Hegu (LI4), and Quchi (LI11). Each needle was inserted perpendicularly to a depth of 20 – 30 mm until the deQi sensation was achieved. The findings indicate that acupuncture may ameliorate clinical symptoms of CD, potentially through modulation of the gut microbiota composition and suppression of Th1/Th17 cell-mediated inflammatory responses [48]. A typical acupuncture session involves retaining the needles for 20–30 minutes, administered once daily over a four-week treatment course.

7.2 Moxibustion therapy

Moxibustion constitutes a significant component of therapeutic approaches in TCM. It involves the burning of mugwort to generate thermal and pharmacological effects, thereby stimulating acupoints along the meridians. This practice serves to harmonise Qi and blood, astringe the intestines and check diarrhoea, warm yang and supplement the kidney, and enhance the body's innate immune function. Frequently selected acupoints include those along the Stomach Meridian of Foot-Yangming and Bladder Meridian of Foot-Taiyang, as well as Zusanli (ST36), Shenshu (BL23), Shenque (CV8), Guanyuan (CV4), Qihai (CV6), Zhongwan (CV12), and Tianshu (ST25). Among these, Zusanli (ST36), the Lower He-Sea point of the stomach, fortifies the spleen and resolves dampness; Shenshu (BL23) tonifies the kidney and stabilises essence; Guanyuan (CV4) strengthens the primordial Qi. A typical treatment involves moxibustion applied for 30 minutes per session, once daily, over seven days, with the treatment course adjusted based on therapeutic response. Moxibustion at these points facilitates spleen and kidney reinforcement, stomach and intestinal regulation, and warming the middle jiao to alleviate diarrhoea. Modern research has revealed that moxibustion inhibits inflammatory responses by suppressing pro-inflammatory cytokines such as IL-1 β and TNF- α , while promoting the release of the anti-inflammatory cytokine IL-10, thereby mitigating inflammatory processes. Additionally, moxibustion can promote the regeneration of certain atrophied organs [49].

Clinical studies have indicated that herbal-partitioned moxibustion (HPM) exerts a strong protective effect on the immune response in patients with UC. The pro-inflammatory cytokines TNF- α , IFN- γ , and IL-12 [50], which are known to exacerbate UC progression through dendritic cell-mediated activation and polarisation of T cells, may be effectively modulated by this intervention. Consequently, the selection of acupoints such as Qihai (CV6), Tianshu (ST25), and Shangjuxu (ST37) is justified, as HPM applied at these locations has been shown to be beneficial for the short-term management of UC [51].

Herb-partitioned moxibustion is an external therapy that integrates herbal medicine, acupoints, and moxibustion into a unified treatment. By combining the benefits of all three components, it not only stimulates acupoints through moxibustion but also enhances the percutaneous absorption of medicinal herbs via the heat generated, thereby potentiating therapeutic efficacy and broadening the treatment scope compared to simple moxibustion. Commonly used agents include Fu Zi and custom formulations comprising herbs such as aconite, Dan Shen, and Hong Hua. These herbs are ground into powder and blended with yellow wine, vinegar, or ethanol to form medicinal cakes. Acupoint selection typically focuses on the stomach and bladder meridians. The optimal treatment protocol involves administering two cones per session every other day. Modern studies demonstrate that herb-partitioned moxibustion alleviates colonic inflammation by inhibiting the NF- κ B pathway and STAT3 phosphorylation, thereby reducing the release of pro-inflammatory cytokines IL-1 β and IL-6 [52].

7.3 Chinese herbal enema

Chinese herbal retention enema is a commonly employed method for treating IBD. It allows direct action on the affected site, bypassing hepatic first-pass metabolism, elevating local drug concentration, promoting the absorption and resolution of inflammation, and facilitating the recovery of the intestinal mucosa, thereby rapidly ameliorating symptoms [53]. Herbs frequently selected include Huang Qin (*Scutellaria baicalensis*), Huang Lian (*Coptis chinensis*), and Huang Bai (*Phellodendron*) to clear heat; Zhi Shi (*Citrus aurantium*) to break stagnant Qi; Dang Gui (*Radix angelicae sinensis*) and Dang Shen (*Radix et Rhizoma Salviae Miltiorrhizae*) to fortify the spleen and supplement Qi. Some studies also utilise Yunnan Baiyao for its wound-healing properties. Enema therapy in moderate to severe patients has been shown to significantly reduce symptom scores (e.g. diarrhoea, abdominal pain, mucoid bloody stools) and ameliorate disease severity to a certain extent [54].

7.4 Acupoint application therapy

Acupoint application therapy is a characteristic TCM treatment modality developed based on acupuncture theory. It involves grinding selected Chinese herbs into fine powder, which is then mixed with ginger juice, vinegar, or water to form a paste or pill and applied topically to specific acupoints. For IBD patients, commonly used herbs include cinnamon (Rou Gui), Yi Yi Ren, Huang Qi, and Ding Xiang, which exert effects such as dispelling cold and alleviating pain, promoting diuresis and draining dampness, and fortifying the spleen and warming yang. Frequently selected acupoints include Shenque (CV8), Guanyuan (CV4), Tianshu (ST25), Zusanli (ST36), and Pishu (BL20) to strengthen the spleen, eliminate dampness,

warm the middle jiao, and relieve diarrhoea. The application is typically maintained for 6 hours per session, with a treatment course lasting approximately four weeks [55].

7.5 Acupoint catgut-embedding therapy

Acupoint catgut-embedding therapy is an external treatment method in TCM derived from acupuncture principles. It involves embedding special medical catgut sutures into acupoints to provide continuous stimulation, thereby activating the meridians, balancing yin and yang, regulating Qi and blood, and modulating visceral function, achieving therapeutic effects. Modern medical studies have found that this therapy can improve erythrocyte sedimentation rate, D-dimer, and C-reactive protein levels in IBD patients. The most frequently used acupoints, in order of utilisation, are Zusanli (ST36), Tianshu (ST25), Dachangshu (BL25), Zhongwan (CV12), and Pishu (BL20). The meridians most commonly selected are the Stomach Meridian of Foot-Yangming and the Bladder Meridian of Foot-Taiyang [56].

7.6 The emergence of intelligent acupuncture robots

With continuous technological advancement, researchers have delved into critical areas such as acupoint localisation, technique acquisition, and human-machine interaction. They have also challenged existing *deQi* detection methods involving mechanics, electrical signals, and laser Doppler imaging. Intelligent acupuncture robots are poised to play a significant role in enhancing acupuncture efficacy and ensuring patient safety, offering modern medicine an efficient and intelligent therapeutic approach. The emergence of intelligent acupuncture robots [57].

8. Efficacy and evaluation

8.1 Clinical efficacy evaluation

Clinical efficacy evaluation represents the most fundamental and intuitive assessment, primarily based on the patient's symptoms and subjective experience. Key indicators such as diarrhoea, abdominal pain, and haematochezia should be substantially resolved, with the patient reporting a return to normalcy. For UC, the Mayo Score is the most widely used standard, comprising four items: stool frequency, rectal bleeding, endoscopic findings, and the physician's global assessment. A total score of ≤ 2 , with no subscore exceeding 1, is defined as clinical remission. For CD, the CD Activity Index (CDAI) is the traditional benchmark, though the Harvey-Bradshaw Index (HBI) is also frequently utilised in clinical practice [58].

8.2 Endoscopic efficacy evaluation

Endoscopic evaluation serves as a core indicator for assessing IBD outcomes. In UC, a Mayo endoscopic subscore of ≤ 1 indicates endoscopic remission, suggesting normal mucosa or absence of active inflammation. The Ulcerative Colitis Endoscopic

Index of Severity (UCEIS) offers a more refined assessment tool. For CD, the Simple Endoscopic Score for Crohn's Disease (SES-CD) is employed, grading features such as ulcer size, ulcerated surface, and stenosis across different intestinal segments.

8.3 TCM scoring

TCM scoring for IBD is grounded in the principle of treatment based on pattern differentiation. Practitioners gather information through the four diagnostic methods: inspection, listening & smelling, inquiry, and palpation to categorise patients into specific TCM patterns. A scoring scale assigns values to symptoms and signs (including tongue and pulse manifestations) corresponding to each pattern, stratified by severity. Compared to pre-treatment baseline [59]:

- A reduction in total pattern score $\geq 95\%$ signifies clinical remission.
- A reduction $\geq 70\%$ is considered markedly effective.
- A reduction $\geq 30\%$ is deemed effective.
- A reduction $< 30\%$ indicates ineffectiveness.

9. Prevention and management

Whilst IBD is incurable, long-term remission can be achieved through scientific and standardised self-management. This is encapsulated in the concept of the 'five core components of prevention': standardised medication use, nutritional management, lifestyle adaptation, regular monitoring, and psychological well-being. By effectively managing these five areas, patients can achieve significant disease control and minimise the risk of relapse and complications.

In China, the prevalence of anxiety, depression, sleep disorders, and impaired quality of life among IBD patients is closely correlated with disease duration. Those with a disease course of >5 and ≤ 10 years are more susceptible to anxiety, depression, and sleep disturbances, warranting greater clinical attention. Patients with a duration of >2 and ≤ 5 years appear to enjoy a better quality of life, whilst those with >10 years often demonstrate improved social functioning [60].

Scientific prevention and management of IBD necessitate avoiding self-diagnosis; accurate diagnosis requires a specialised medical team and substantial clinical experience. In daily life, vigilance towards symptoms such as diarrhoea and abdominal pain is essential, as early detection and effective treatment are crucial. Beyond pharmacological intervention, IBD patients benefit from psychological support, nutritional assistance, and individualised comprehensive assessment – considering factors such as age, treatment expectations, and physical condition. Dietary precautions are also advised, including the consumption of easily digestible foods and avoidance of high-fibre items, with all nutritional management being personalised.

10. Summary

IBD is a chronic and relapsing disorder of the digestive tract, whose diagnosis and treatment remain significant challenges in modern medicine. This article has reviewed and compared the concepts, methodologies, and strategies of both TCM and Western medicine in the diagnosis and management of IBD, aiming to provide a comprehensive perspective for clinical practice and patient choice.

Western medicine offers precise diagnosis and targeted therapy, forming a cornerstone for rapid and accurate IBD identification and prompt treatment initiation. TCM, rooted in a holistic perspective, provides novel insights into IBD management. This chapter primarily analysed TCM aetiology and pathogenesis, proposing innovative treatment frameworks based on the theories of Six Constrictions, Deficiency-Toxin-Stasis, Heat, and Gallbladder Qi. It also suggested applicable herbal formulae. With support from modern research, the efficacy of Chinese herbs has been substantiated, and multiple treatment modalities – such as acupuncture, moxibustion, herbal-indirect moxibustion, and Chinese herbal enema – have enriched the therapeutic arsenal for IBD (**Figure 1**). These approaches

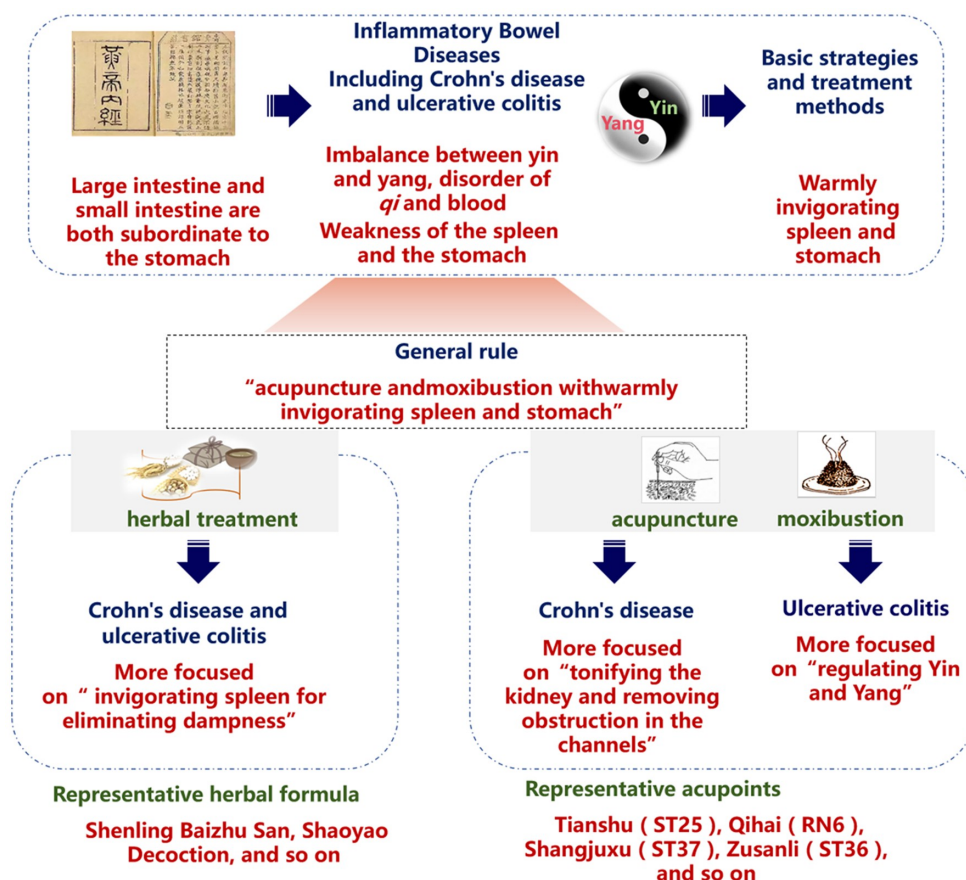


Figure 1.
Summary of the main treatment methods of TCM.

offer potential advantages in reducing adverse effects associated with Western medicine and decreasing relapse frequency.

Therefore, in the treatment of IBD, TCM and Western medicine are not simply interchangeable but are complementary and integrative. During the acute phase, Western protocols can rapidly control inflammation and manage complications, while TCM can assist in alleviating symptoms and supporting healthy Qi. In remission, TCM pattern-based regulation can be synergistically combined with standard Western treatment. Consequently, advancing high-quality clinical research into integrated medicine, elucidating the mechanisms and efficacy of TCM interventions, and establishing standardised integrated diagnostic and treatment guidelines are crucial for enhancing the overall management of IBD.

11. Conclusion

In summary, TCM offers a unique and valuable perspective on IBD, viewing it not as an isolated intestinal disorder but as a systemic condition reflective of internal imbalance. The holistic approach of TCM, which includes herbal medicine, acupuncture, and dietary and emotional regulation, aims to address the root cause while managing symptoms. While the evidence presented here is promising, it is important to acknowledge the limitations of the current body of research, which often includes heterogeneous study designs. Future efforts should focus on conducting large-scale, rigorously designed clinical trials to further validate the efficacy of TCM and elucidate its mechanisms of action. The integration of TCM's holistic principles with the precision of modern medicine holds great promise for developing more effective and personalized strategies for patients with IBD.

Appendices

Chinese herbal medicine

Name	Pharmacological effects
Chai Hu (bupleurum)	Diaphoresis; prevent malaria
Dang Shen (codonopsis pilosula)	Enrich blood; immunity enhancement
Fu Ling (porta cocos)	Calm; promote healthy digestion
Shan Yao (chinese yam)	Improve immune and digestive function
Zhi Qiao (fructus aurantia)	Increases gastrointestinal motility and contractility rhythms
Lian Zi (lotus seed)	Immune regulation; improve digestive function
Sha Ren (amomum)	Bacteriostatic action; peristalsis enhancement
Xiang Fu (rhizoma cyperi)	Relaxes intestinal smooth muscle; anti-inflammatory
Chen Pi (pericarpium citri reticulatae)	Promote secretion of digestive juices; relieve asthma
Bai Shao (radix paeoniae alba)	Antibacterial activity; analgesic
Jie Geng (platycodon grandiflorum)	Dilate blood vessels; antitussive expectorant

Gan Cao (radix glycyrrhizae)	Regulate immunity; inhibit ulcer; protect liver
Mai Ya (malt)	Help digestion; antifungal
Ban Xia (pinellia ternate)	Antitussive expectorant; inhibit ulcer
Xuan Fu Hua (inula flower)	Relieve asthma; antitussive expectorant
Yan Hu Suo (corydalis yanhusuo)	Spasmolysis, analgesia; suppression of gastric ulcer
Sheng Ma (cimicifuga rhizoma)	Releases the exterior and expels toxins; raises yang and lifts sagging; clears heat and cools blood; anti-inflammatory; analgesic.
Mu Xiang (radix aucklandiae)	Promotes qi flow and relieves pain; regulates gastrointestinal motility; anti-inflammatory; antibacterial.
Lai Fu Zi (semen raphani)	Promotes digestion and relieves food stagnation; directs qi downward and reduces phlegm; antibacterial.
Huang Qin (radix scutellariae)	Clears heat and dries dampness; drains fire and detoxifies; anti-inflammatory; antibacterial; protects the liver.
Huang Lian (coptis chinensis)	Resistance of pathogens; antipyretic; antineoplastic
Huang Bai (phellodendron)	Anti-microbial; excite gastrointestinal smooth muscle
Dan Pi (cortex moutan)	Clears heat and cools blood; activates blood and resolves stasis; anti-inflammatory; antibacterial.
Chi Shao (radix paeoniae rubra)	Clears heat and cools blood; dispels stasis and relieves pain; antithrombotic; protects the liver.
Huang Qi (astragalus Membranaceus)	Strengthen immune system; inhibit ulcer; improve substance metabolism
Zi Cao (arnebia root)	Cools blood and promotes eruption; clears heat and detoxifies; activates blood; antibacterial; antiviral.
Qian Cao (madder root)	Cools blood and stops bleeding; activates blood and unblocks meridians; analgesic; anti-inflammatory.
Dang Gui (radix angelicae sinensis)	Anti-microbial; antipyretic analgesic
Dang Shen (radix et rhizoma salviae miltiorrhizae)	Activates blood and resolves stasis; clears the heart and relieves vexation; cools blood and reduces swelling; dilates coronary arteries; improves microcirculation.

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Conflict of Interest

The authors declare no conflict of interest.

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