

# Research on the Progress of Treating Gastroesophageal Reflux Disease with Modified Classic Traditional Chinese Medicine Prescription

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**Abstract:** Gastroesophageal reflux disease (GERD) is a high-incidence digestive system disease. Western medicine mainly uses drugs such as proton pump inhibitors to inhibit gastric acid secretion, but some patients are accompanied by symptoms such as non-acid reflux and gas reflux, which cannot effectively treat the disease. It is necessary to actively explore other treatment schemes. Traditional Chinese medicine (TCM) has a long history of research on gastroesophageal reflux disease, which emphasizes the treatment based on syndrome differentiation as a whole. Through the treatment of various and multi-component TCM prescriptions, the patient's body condition can be adjusted, and the treatment effect on gastroesophageal reflux disease is reliable, which has obvious therapeutic advantages. To further clarify the treatment of gastroesophageal reflux disease, this study reviewed and analyzed the research progress of the treatment of liver disease with modified prescriptions, and the report is as follows.

**Keywords:** Addition and subtraction of classic TCM prescriptions; Gastroesophageal reflux disease; Research progress; Liver and stomach stagnation heat; Qi stagnation and phlegm obstruction

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## 1. Introduction

Gastroesophageal reflux disease (GERD) refers to a syndrome in which stomach contents reflux into the esophagus and tissues outside the esophagus. Patients' esophagus and surrounding tissues are stimulated by gastric acid, which can cause heartburn, chest pain, belching, burning sensation in the upper abdomen, and other symptoms. Under gastroscopy, mucosal lesions can be seen on the surface of the esophagus, which can form a large area ulcer in severe cases, which seriously affects the normal eating and digestive system health of patients. It is necessary to intervene as soon as possible to avoid serious adverse prognosis caused by long-term gastroesophageal reflux<sup>[1]</sup>. The pathogenesis of gastroesophageal reflux is complicated. Western medicine believes that gastroesophageal motility disorder is the main cause of gastroesophageal reflux. At the same time, factors such as long-term bad mood, uncontrolled diet, abnormal immune function, oxidative stress,

inflammatory reaction, and visceral hypersensitivity are also closely related to gastroesophageal reflux, but its pathogenesis has not been fully explored [2]. The clinical treatment of gastroesophageal reflux is mainly to fight against acid reflux. Omeprazole and other acid inhibitors can be taken to reduce gastric acid secretion and improve the symptoms of gastric acid reflux. At the same time, it can be combined with gastric motility-promoting drugs to promote gastric emptying and alleviate the symptoms of gastric contents reflux. However, many patients have poor treatment effects and cannot be effectively improved after standardized treatment. The symptoms of reflux heartburn need to be actively explored [3]. There are many prescriptions for treating gastroesophageal reflux disease in traditional Chinese medicine (TCM), which can be treated according to the patient's condition, so it has achieved good results. This paper summarizes the research progress of treating gastroesophageal reflux disease with modified prescriptions.

## 2. Etiology and pathogenesis of GERD in TCM

There is no specific name for gastroesophageal reflux disease in traditional Chinese medicine; it falls under the categories of “acid regurgitation,” “esophageal furuncle,” and other related conditions. The pathogenesis and etiology of patients are complex, with significant individual differences, and the clinical manifestations vary greatly depending on the disease's course. Gastroesophageal reflux disease is closely related to dysfunction in organs such as the liver, gallbladder, and spleen. The disease is located in the esophagus and stomach and can be categorized into deficiency and excess types. Deficiency primarily involves the spleen, while excess involves the liver. Deficiency is mainly manifested as spleen and stomach weakness, whereas excess is manifested as liver qi stagnation. The patient's stomach loses balance and descends, causing the stomach qi to rise and turn into fire over time. Consequently, many syndromes involve liver and stomach stagnation, and a relatively high proportion of patients fall into this category [4].

## 3. TCM syndrome types and modified prescriptions treatment

### 3.1. Liver and stomach heat stagnation

Liver qi invading the stomach and disharmony of the seven emotions are closely related to the occurrence and development of “acid regurgitation disease” and “esophageal abscess.” Long-term emotional disharmony and disorder can lead to liver qi discomfort and stagnation of qi. Prolonged liver depression can generate heat and fire, and the liver's inability to clear stagnation impedes the smooth flow of qi. This can result in dysfunction of the spleen and stomach, causing stomach invasion and liver stagnation. Regulating liver qi can restore the normal movement of qi, relieve stagnation, clear heat, and regulate the stomach. This helps improve the abnormal function of the spleen and stomach, correcting the syndrome of liver-stomach stagnation and heat, and promoting the self-healing of “acid regurgitation” and “esophageal abscess” [5].

When selecting classic prescriptions, attention should be given to soothing the liver, regulating qi, and relieving depression. Chaiping Decoction has the effects of regulating qi, invigorating the spleen, promoting blood circulation, and removing blood stasis. It emphasizes the coordination of form and spirit, making it particularly suitable for patients with liver-stomach stagnation and heat syndrome. Chaiping Decoction, as the main ingredient, relieves stagnation and regulates the liver and gallbladder. Huangling acts as a secondary ingredient, primarily used to dry dampness and clear heat. The combination of these ingredients relieves liver depression and clears the heat from the liver and stomach. Ginseng, licorice, and jujube strengthen the spleen and replenish qi, promoting the growth of stomach yang and improving the flow of qi. *Pinellia ternata* and *Magnolia officinalis* eliminate dampness, reduce adverse reactions, and stop vomiting, while ginger and

Rhizoma Atractylodis enhance the effects of regulating the stomach and strengthening the spleen. Licorice regulates the spleen and stomach. The combination of these ingredients strengthens the effect of soothing the liver and relieving depression, lowers the adverse flow, relieves flatulence, and effectively improves patients' stomach fullness, promoting overall health. Chaiping Decoction is widely used in clinical practice and can be combined with antacid drugs for a synergistic effect. It provides an ideal improvement in symptoms such as acid regurgitation and burning and has a significantly better treatment effect than using Western medicine alone. It can shorten the course of treatment, improve patients' gastric motility, and has a good therapeutic effect <sup>[6]</sup>.

The modified Shugan Hewei formula is also commonly used to treat “acid regurgitation” and “esophageal abscess” and is widely applied in treating atrophic gastritis. Shugan Hewei formula excels in soothing the liver, regulating qi, regulating the stomach, and descending the adverse trend, mainly treating liver qi invading the stomach. Relevant pharmacological studies have found that this prescription effectively promotes gastrointestinal motility, increases gastrin secretion, improves gastroesophageal motility disorders, and enhances the health of gastric and esophageal mucosa. Patients with liver-stomach stagnation and heat syndrome often experience emotional disturbances such as anxiety and depression. In treating these patients, it is essential to focus on overall adjustment, strengthening treatments that soothe the liver and relieve depression. This approach helps alleviate negative emotions, promotes overall recovery, and reduces the risk of recurrence <sup>[7]</sup>.

### **3.2. Qi stagnation and phlegm obstruction**

The syndrome of qi stagnation and phlegm stagnation is a common type of “acid regurgitation” and “esophageal abscess.” Patients often exhibit symptoms due to improper diet and emotional disharmony, which can damage the spleen and stomach over time. The spleen governs transport and circulation, while the liver governs discharge, cooperating with the spleen and stomach to manage water transport and regulate qi. Damage to the spleen and stomach, along with liver stagnation, disrupts the transport and circulation of water and dampness. Consequently, qi and water become stagnant, leading to liver stagnation and qi stagnation.

The treatment for qi stagnation and phlegm stagnation syndrome should focus on regulating qi to relieve depression, eliminating dampness, and reducing adverse reactions, with a high application rate of pungent and bitter drugs. Banxia Houpu Decoction is commonly used for this syndrome as it can relieve qi stagnation and promote self-transformation of phlegm-dampness. This classic prescription is a qi-regulating agent that disperses qi stagnation and reduces adverse flow. It is particularly effective in treating plump qi, improving symptoms of esophageal dyskinesia, and correcting gastroesophageal motility disorder <sup>[8]</sup>.

Daizhexuanfu Decoction has the effects of reducing adverse reactions, stopping vomiting, resolving phlegm, and calming liver yang. It effectively improves symptoms such as stomach fullness, belching, hiccups, and chest and diaphragm fullness caused by weakness of stomach qi and internal phlegm resistance. This decoction has a reliable therapeutic effect on patients with qi stagnation and phlegm obstruction, making it useful for treating this condition. It helps regulate esophageal smooth muscle and improve esophageal motility disorder <sup>[9]</sup>.

### **3.3. Syndrome of middle qi deficiency**

The pathogenic factors for patients with the syndrome of deficiency of middle qi are the spleen and stomach weakness. Spleen deficiency hinders the transportation of food, and weak spleen and stomach qi impair the biochemistry of qi and blood. This imbalance in qi movement causes the spleen to fail in ascending and descending functions, and the stomach to fail in descending turbidity, leading to abnormal upward and downward stomach qi movement.

Chaishao Liujunzi Decoction is an important prescription for invigorating the spleen, calming the liver, resolving phlegm, and expelling wind. It not only strengthens the spleen and tonifies the middle warmer but also regulates qi, controls acid, and improves the imbalance of qi movement in the spleen and stomach. It is a reliable treatment for the syndrome of deficiency of qi in the middle warmer, as it can improve the relaxation of the lower esophageal sphincter, inhibit the reflux of stomach contents, and prevent acid rot and turbidity from ascending with stomach qi, thereby achieving the purpose of treating the syndrome of deficiency of qi in the middle warmer<sup>[10]</sup>.

Patients with the syndrome of deficiency of middle energizer and disordered adverse qi flow often exhibit spleen deficiency, hyperactivity of the liver, and excessive phlegm. Buzhong Jiangni Decoction can supplement the middle energizer, replenish qi, warm the liver, reduce adverse qi flow, and stop vomiting. It effectively improves the therapeutic outcomes for patients, promotes the smooth flow of qi, enhances the spleen and stomach functions, restores the balance of ascending and descending turbidity, and has a beneficial effect in treating the syndrome of deficiency of middle energizer and adverse qi flow<sup>[11]</sup>.

### **3.4. Gallbladder heat being offensive to the stomach**

The gallbladder and stomach are central to the body's qi movement, working in coordination with each other. The gallbladder controls the ascending and descending turbidity, helping to regulate digestive processes. However, the gallbladder is easily affected by heat, which can disrupt this balance. Prolonged heat disturbance can depress the gallbladder meridian, damage the stomach, and cause gallbladder heat to force stomach qi upward, leading to the syndrome of gallbladder heat invading the stomach. Effective treatment requires addressing both the gallbladder and stomach simultaneously. Since the gallbladder is a yang and fu organ, treatment should focus on benefiting the gallbladder, clearing heat, and regulating the stomach<sup>[12]</sup>.

The use of classic formulas such as Chaihu Shugan Powder, Chaiping Decoction, Sini Powder, and Jiangni Decoction can effectively improve this syndrome<sup>[13]</sup>. Patients with gastroesophageal reflux often experience bile reflux symptoms, which include mixed acid-base reflux. Prescriptions like Chaihu Shugan Powder and Chaiping Decoction can soothe the liver, relieve depression, benefit qi, strengthen the spleen, promote gastrointestinal peristalsis, regulate inflammatory responses, and improve bile reflux symptoms. Therefore, these treatments are effective for the syndrome of gallbladder heat invading the stomach.

### **3.5. Syndrome of mixed cold and heat**

The syndrome of mixed cold and heat refers to the condition of having upper heat and lower cold. This syndrome is characterized by a combination of deficiency and excess. Spleen disorders are primarily related to deficiency, which depletes spleen yang and makes cold and dampness more likely to occur. This can result in symptoms of lower cold, such as diarrhea and cold limbs. The stomach, being the yangming fu organ, is prone to stagnation and heat accumulation, which are mostly excess conditions. This interplay between the spleen and stomach can create a state of upper heat and lower cold, with prolonged heat inflammation and descending cold<sup>[14]</sup>.

Treating the syndrome of mixed cold and heat requires balancing these states through the use of pungent and bitter flavors. Banxia Xiexin Decoction is a commonly used remedy for spleen and stomach diseases characterized by cold and heat. It warms the spleen yang, reduces stomach heat, has a significant harmonizing effect, and can regulate both the liver and spleen, as well as cold and heat. It is frequently used in clinical practice. Modern pharmacological research indicates that this prescription helps regulate gastrointestinal hormones, promotes the secretion of gastrin and motilin, enhances esophageal peristalsis, improves gastrointestinal motility, and alleviates gastroesophageal reflux disease<sup>[15,16]</sup>.

## 4. Conclusion

In recent years, the clinical application of TCM has expanded significantly and is now widely used in the treatment of GERD. This has led to a wealth of experience in diagnosis and treatment, highlighting the advantages of TCM such as low toxicity and high efficacy. TCM categorizes GERD into various syndrome types, allowing for targeted treatments tailored to the specific syndrome of each patient, thus addressing both symptoms and root causes. The main TCM syndrome types for patients with GERD include heat stagnation in the liver and stomach. Additionally, syndromes such as qi and phlegm stagnation, deficiency of middle qi, and invasion of the stomach by gallbladder heat are also common. Treatment should be based on the specific TCM syndrome type diagnosed in each patient.

## Disclosure statement

The authors declare no conflict of interest.

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