

# Professor Shen Shuwen's Experience in Treating Gastroesophageal Reflux Disease based on the Theory of "Tonifying Deficiency, Remove Stagnation, Descending as well as Moistening"

Lingyue Zhao, Jian Song\*

Shaanxi University of Chinese Medicine, Xianyang 712046, Shaanxi, China

\*Correspondence Author

**Abstract:** *Gastroesophageal reflux disease (GERD) is a prevalent disease in the diagnosis and treatment of internal medicine in traditional Chinese medicine. In the face of the challenges posed by modern medicine's limited drug treatment options and high-risk adverse reactions, traditional Chinese medicine offers advantages in terms of better efficacy and broader application prospects. Professor Shen Shuwen summarized clinical experience and proposed that the pathological characteristics of GERD lie in three aspects: "deficiency, impediment, and reflux". In terms of treatment, he emphasized "tonifying deficiency, remove stagnation, descending as well as moistening". His clinical efficacy has been quite fruitful. This article reveals Professor Shen Shuwen's unique academic thoughts and underlying traditional Chinese medicine theories by organizing his experience in prescribing herbal formulas for the treatment of GERD.*

**Keywords:** Shen Shuwen, Tonifying deficiency, Remove stagnation, Descending as well as moistening, Gastroesophageal reflux disease, Experience of famous doctors.

## 1. Introduction

Gastroesophageal reflux disease (GERD) is one of the common gastrointestinal diseases worldwide, caused by the reflux of gastric and duodenal contents into the esophagus and other parts of the body, resulting in a series of clinical syndromes [1]. With the economic development of the times and the change of modern people's lifestyle, the incidence rate of GERD has increased year by year, with the global prevalence rate of 13.3% [2] and the prevalence rate of community population in China of 7.69% [3]. The occurrence of GERD is mainly affected by the decrease in pressure of the lower esophageal sphincter and the weakening of esophageal clearance ability [4]. In addition to typical gastrointestinal symptoms such as reflux and heartburn, GERD can cause a wide range of extraesophageal complications, such as cough, asthma, and throat and airway lesions [5]. A recent analysis suggests that GERD can cause severe mental burden and psychological stress in patients, significantly reducing their quality of life [6].

GERD belongs to the category of modern medical diseases, and according to its symptoms such as Belching and Regurgitation, foreign body sensation in the throat and heartburn", it is classified as "Oesophageal achalasia" and "acid regurgitation" in traditional Chinese medicine [7]. "Causing illness due to deficiency pathogens or excess pathogens" is the causes of GERD. Compared with Western medicine, traditional Chinese medicine has the advantages of multi-level, multi-target, and multi method treatment for GERD. It can not only inhibit acidity, regulate esophageal and gastrointestinal motility, promote damaged mucosal repair, but also alleviate gas, solid reflux, bile reflux, and improve high sensitivity of the internal organs to a certain extent.

Professor Shen Shuwen is a nationally renowned traditional Chinese medicine practitioner and a key academic leader of

the State Administration of Traditional Chinese Medicine. He has been engaged in clinical work on traditional Chinese medicine spleen and stomach diseases for 50 years. Professor Shen has extensive knowledge of ancient and modern medicine, and is dedicated to the study of traditional Chinese medicine internal diseases, especially spleen and stomach diseases. He has put forward numerous valuable diagnostic and treatment ideas and medication experience, forming a unique theoretical system and academic ideas.

Traditional Chinese Medicine believes that the occurrence of GERD is often related to factors such as seven emotions causing internal damage, improper diet, work-rest imbalance, as well as Evil qi. Emotional disorders, liver and gallbladder dysfunction, Liver qi affecting the stomach leads to gastric qi stagnation, Disharmony between the liver and stomach, ascending of stomach qi, prolonged lingering without healing, qi stagnation turning into fire, liver and stomach stagnation and heat, disease progression, consuming qi and damaging yin, resulting in gastric yin deficiency, ultimately leading to qi and Yin deficiency. As stated in the *Medical Records for Clinical Guidance*: "If horizontal invasion of the stomach by the liver, the stomach soil will inevitably be injured. Treatment is difficult, and the Body fluids and blood will wither. Lips will be red, tongue will be red, throat will be dry, and the taste of grains will become sour and greasy, indicating that the stomach juice has been robbed and the stomach yin will not return." The book *Basic Questionds* states: "Acute diarrhea, accompanied by tenesmus, vomiting, and acid reflux, belongs to the syndrome of excess heat." If the diet is irregular or external dampness and heat evil qi is transmitted into the body, dampness and heat will be endogenous. Over time, dampness and heat will be trapped in the Middle jiao, causing dysfunction of the spleen and stomach, leading to acid regurgitation. As the *Medical Transmissions* states: If the cold is in the Middle jiao, it cannot be digested when eaten. If the external cold pathogen is transmitted into the body or if the

diet is irregular, eating raw and cold food, the cold pathogen invades the stomach, damaging the yang qi of the spleen and stomach, leading the stomach cannot be decomposed and the spleen cannot be transported [8].

## 2. Distinguishing the Etiology and Pathogenesis of GERD from the Theory of “Tonifying Deficiency, Remove Stagnation, Descending as well as Moistening”

Professor Shen believes that the pathological characteristics of GERD lie in three aspects: “deficiency, impediment, and ascending”. “Impediment” refers to qi impediment, dampness impediment, and heat impediment. “Deficiency” refers to spleen qi deficiency, spleen yang deficiency, and stomach yin deficiency. “Reversal” refers to the ascending of stomach qi, gallbladder qi, and lung qi. The *Basic Questions* states: “The birth of all diseases has both deficiency and excess. Long term illness can lead to deficiency, while excess illness is prone to blockage and obstruction.” Early GERD is often caused by seven emotions causing internal damage, improper diet, work-rest imbalance, as well as Evil qi leading to impediment, dampness impediment, and heat impediment. Exuberant heat in the liver and stomach and ascending of gallbladder and stomach impediment are key pathological mechanisms. In the later stage of the disease, it is often caused by old age, weakness, and long-term illness, which can damage the spleen and stomach. Spleen qi and stomach yin deficiency are the key pathological mechanisms.

### 2.1 Qi, Damp and Heat Impediment, Middle Jiao Obstruction

Qi stagnation, is often caused by emotional disorders, cold stagnation, or dampness impediment. Abnormal rise and fall of spleen and stomach qi, stagnation of qi and coagulation of phlegm, and retrograde qi leading to GERD. Clinical manifestations include reflux, upper abdominal distension, and foreign body sensation in the throat. If the liver qi stagnation and the stomach is invaded by transverse reflux, resulting in disharmony between the liver and stomach, and upward reflux of stomach qi, symptoms such as acid reflux, heartburn, rib pain, and belching can be seen. Dampness stagnation can be divided into cold and heat, which means that damp heat evil qi or cold dampness evil qi is trapped in the spleen and stomach. The spleen prefers dryness and dislikes dampness. If dampness and heat accumulate in the spleen and stomach, the stomach cannot accept and digest water and grains, and qi is reversed, leading to the occurrence of GERD. Clinically, symptoms such as acid reflux, upper abdominal distension, upper abdominal pain, and poor appetite can be seen. As stated in the *Danxi's Experiential Therapy*: “Damp heat in the stomach, when food enters the stomach, it is suppressed by damp heat depression, and its food cannot be transmitted, resulting in the appearance of pantothenic acid.” If the cold and damp evil qi is trapped in the spleen and stomach, the spleen will lose its function, the damp evil will block and obstruct, and the stomach qi will reverse flow and develop symptoms. Clinically, symptoms such as reflux, abdominal distension, and poor appetite can be seen. The book *Assembled Supplements to Diagnosis and Treatment* states: “If the Pathogenic cold invades the stomach and

produces stomach acid in an instant, it is actually caused by the Pathogenic cold.” There was originally no heat stagnation in the stomach. Heat stagnation is often caused by emotional disorders, liver dysfunction, qi stagnation, liver invasion of the stomach, long-term accumulation of heat, and the formation of liver stomach stagnation heat. Common clinical symptoms include acid reflux, heartburn, and upper abdominal burning sensation. Gong Tingxian wrote in *Longevity and Life Preservation*: “Sour taste corresponds to the liver (wood) in the Five Elements.” Due to the strong heart fire, it restricts the lungs and cannot calm the liver fire, resulting in strong liver fire. Over time, heat accumulates, leading to the appearance of pantothenic acid.

### 2.2 Stagnation and Deficiency Coexist, with Qi, Yin, and Yang Deficiency

The “deficiency” of GERD is manifested as spleen qi deficiency, spleen yang deficiency, and stomach yin deficiency. GERD is a common chronic disease in clinical practice, with a lingering and difficult to cure condition that develops over time. Therefore, in the later stages of the disease, it often manifests as a deficiency syndrome. The *Treatise on Damp-Heat Diseases* states: “If there is a deficiency of Central qi, the disease lies in the The spleen meridian of foot-Taiyin.” Professor Shen believes that Qi deficiency is more common in the spleen, while Yin deficiency is more common in the stomach. Various causes lead to spleen damage, resulting in Spleen qi deficiency Pattern, with clinical manifestations mainly including reflux, fatigue, and poor appetite. Spleen deficiency cannot transport water and grains, and can also cause stagnation due to deficiency, ultimately leading to stagnation and deficiency coexist, resulting in Spleen deficiency with qi stagnation pattern, Spleen deficiency with dampness pattern and other syndromes. Long term spleen qi deficiency affects spleen yang, leading to the decline of Middle jiao yang deficiency, ascending of stomach qi due to yang deficiency, and disordered qi activity resulting in GERD of Yang deficiency of the spleen and stomach pattern. The book *Cao's Elucidation of the Doctrine of Cold Damage and the Golden Chamber's Essentials* states: “The Middle jiao yang deficiency with cold and the qi counterflow.” Therefore, clinical symptoms such as reflux, vomiting with clear water, phlegm and saliva, and cold limbs can be seen. Professor Shen inherited the academic thought of Ye Tianshi that Professor Shen inherits the academic idea of Ye Tianshi that “the spleen needs spleen yang to start transporting water and grains, and the stomach needs the nourishment of stomach yin to function normally”. He believes that deficiency to the stomach is often manifested as yin deficiency, and when the stomach yin is deficient, the stomach loses nourishment and the stomach qi is reversed, resulting in this disease. Clinically, symptoms such as acid reflux, heartburn, dry mouth, and poor appetite can be seen.

### 2.3 Gallbladder Hyperactivity Leading to the Transformation of Fire, and Lung and Stomach Qi Counterflow

GERD's “reverse” refers to the counterflow of stomach qi, gallbladder qi and lung qi. When the stomach descends, turbid qi is transmitted downwards, and when the stomach qi is

reversed, the qi activity is disordered. Ascending of stomach qi is considered the basic pathogenesis of GERD. Both deficiency syndrome and excess syndrome can lead to abnormal rise and fall of the Middle jiao qi movement, impaired descending of stomach qi, and the reversal of stomach qi upwards, resulting in this disease. Ascending of stomach qi can affect organs such as the lungs and gallbladder. *The Heart Source of the Four Sages* states: “When the spleen qi is harmonious, the liver rises with the spleen, the gallbladder falls with the stomach” and “The decline of lung qi mainly lies in the stomach. When stomach qi is blocked, there is no way for the lung qi to descend”. The ascending and descending movements of gastric qi are closely related to the lungs and gallbladder. The gallbladder follows the scending of the stomach, and if the stomach qi is reversed upwards, the gallbladder qi follows the upward movement of the stomach. If the condition persists and gallbladder stagnation turns into fire, the gallbladder fire will ascend, resulting in symptoms such as acid reflux, heartburn, bitter mouth, insomnia, etc. Ascending of stomach qi affects the lungs without a descending pathway, resulting in failure of lung in depurative descending. Therefore, GERD patients may experience symptoms of lung qi scending such as coughing and asthma. If the live-stomach stagnation heat and yin deficiency of the stomach, the stomach qi will ascend. If the heat follows the qi ascend, there will be acid reflux, heartburn, dry mouth, and a burning sensation in the upper abdomen. If there is disharmony between the liver and stomach, stagnation of qi, and phlegm coagulation, belching, upper abdominal distension, and a feeling of foreign body in the throat may occur. If there is stagnation in the Middle jiao or weakness in the spleen and stomach, there will be upper abdominal pain. The clinical symptoms of GERD mainly include acid reflux, heartburn, dry mouth, upper abdominal distension, belching, upper abdominal pain, bitter mouth, poor appetite, foreign body sensation in the throat, and burning sensation in the upper abdomen, depending on the type of syndrome. Professor Shen, based on clinical experience and traditional Chinese medicine theory, summarized that the main types of traditional Chinese medicine for the treatment of GERD include liver-stomach stagnation heat pattern, stomach yin deficiency pattern, phlegm coagulation and qi stagnation pattern, disharmony between the liver and stomach pattern, and ascending of gallbladder qi pattern. This is in line with his approach of treating GERD from the perspectives of “deficiency, impediment, and ascending”.

### 3. Treatment Methods and Prescriptions of GERD from the Theory of “Tonifying Deficiency, Remove Stagnation, Descending as Well as Moistening”

Professor Shen’s treatment for GERD mainly follows the therapeutic principle of “tonifying deficiency, remove stagnation, descending as well as moistening” and treats according to the different pathological mechanisms of “deficiency, impediment, and ascending”. If there is deficiency, it should be nourished; if there is stagnation, it should be promoted. In response to the pathological characteristics of GERD, where the stomach meridian is prone to dryness, he proposed to treat it with the principle of “moistening to reduce”. When treating GERD, attention

should be paid to the use of the three words “smoothen, supplement, and moisten”.

#### 3.1 Regulating Qi, Promoting Circulation and Reducing Stagnation, Clearing Heat, Dispelling Dampness, and Opening Up Stagnation

“smoothen” refers to the practice of regulating qi stagnation, dispelling stagnation, promoting circulation, and reducing stagnation. Different treatment methods such as regulating qi stagnation, dispelling dampness, harmonizing the stomach, clearing liver fire are adopted for different types of qi stagnation, dampness stagnation, and heat stagnation.

*Coptis chinensis*, Hedgehog Skin, *Evodia*, *Gardenia*, *Anemarrhena*, and *Paeonia lactiflora* are commonly used drugs by Professor Shen for the treatment of GERD heat stagnation pattern. Among them, *Evodia*, *Gardenia*, *Coptis chinensis*, and Hedgehog Skin are commonly used corner medicines by Professor Shen for treating GERD, which are composed of hedgehog skin added to Zuojin Pill. *The Golden Mirror of the Medical Tradition* states: “Using only *Coptis chinensis* as the monarch medicine, the method of reduce the son for excess paterhas the meaning of formulas that clear exuberant heat with bitter and cold medicines”. *Coptis chinensis* is bitter and cold, good at clearing heat in the middle jiao, can relieve heat stagnation, and treat liver-stomach transformed heat pater. The main active ingredient of Huanglian is berberine [9]. Through pharmacological research, Tian Jiahao et al. [10] confirmed that berberine can inhibit the expression of inflammatory factors such as TNF- $\alpha$ , protecting the mucosa in GERD from inflammatory damage. *Evodia* has a pungent and bitter taste, which can stop nausea with pungent-warm, circulate and down-regulate qi. *The Collected Discourses on Materia Medica* states: “*Evodia* is a medicinal herb that can relieve depression, dispel cold, and making qi descend.” *Evodia* is mainly composed of alkaloids and terpenes as active ingredients, which have the effects of protecting the gastrointestinal tract, repairing gastric mucosal damage, and antiemetic effects [11]. Cui Guoliang et al. [12] confirmed through randomized controlled trials that *Evodia* alkaloids can significantly downregulate the expression levels of inflammatory factors such as IL-1 $\beta$  in the serum of GERD model rats, and improve the performance of esophageal mucosa in rats. Li Yuewen et al [13] found through KEGG signaling pathway analysis of the drug targets of Zuojin pill that Zuojin pill affects gastric acid secretion and increases gastric acid PH value by acting on ADRA1B and other signaling pathways, thereby treating GERD. *The Systematic Materia Medica* states: “Hedgehog skin is bitter and flat in nature, can open up stomach qi, treat stomach reflux, and cool blood.” Hedgehog leather has the effects of regulating stomach qi and treating nausea, and is Professor Shen’s characteristic medication for treating GERD. Modern research has shown that hedgehog skin contains a large amount of amino acids that can promote the proliferation of fibroblasts and epithelial regeneration [14], which is beneficial for the repair of gastric and esophageal. mucosa. The combination of three medicines has the characteristics of being pungent opening and bitter descending, balance and regulate cold and heat and regulate and balance yin and yang. It can clear the liver, relieve fire, lower reflux, stop vomiting, and harmonize the stomach to remove blood stasis. *Gardenia*

and Anemarrhena are commonly used drugs by Professor Shen for the treatment of GERD. The combination of the two traditional Chinese medicines can clear heat and relieve depression, eliminate fire and relieve annoyance, and increase the effectiveness of the three traditional Chinese medicines in clearing the liver and relieving depression. *Paeonia lactiflora* has the effect of clearing liver heat and astringing yin. In the *Essentials of Materia Medica* states: " (*Paeonia lactiflora*) is sour and astringent in the liver, with astringency as a reducing and dispersion as a reinforcing". Li Xueyong et al. [15] found through pharmacological research that total glucosides of *Paeonia lactiflora* inhibit the activation of the JAK2/STAT3 signaling pathway and alleviate inflammatory reactions.

Foshou, Xuanfuhua, Banxia, Gualou, Zhishi and Chenpi are commonly used drugs by Professor Shen for treating GERD qi stagnation pattern. It has the effects of promoting qi stagnation, harmonizing the stomach and reducing reflux, stopping cough and resolving phlegm, especially suitable for GERD caused by lung loss, phlegm stagnation and stagnation in the chest due to qi stagnation and phlegm coagulation combined with cough and phlegm. Foshou and Xuanfuhua are commonly used drugs by Professor Shen to treat GERD qi stagnation pattern. The *Newly Revised Materia Medica* records that Foshou has the effects of regulating qi, soothing the liver, harmonizing the stomach, transforming phlegm, and resolve stagnation. Liang Xueyan et al. [16] confirmed through clinical observation that Foshou Yujin Decoction, mainly composed of Foshou, has significant therapeutic effects on bile reflux gastritis of disharmony between the liver and stomach pattern. Xuanfuhua can regulate qi and resolve masses transform phlegm and drain water retention. The book *Ben Jing Feng Yuan* records that Xuanfu flowers can rise and fall, suitable for the lungs and large intestine ascending, descending. XI Chen et al. [17] found through pharmacological research that the extract of Xuanfu, 8 $\beta$ -olide, can inhibit the production of nitric oxide by M1 macrophages in mice and has anti-inflammatory effects. Banxia can dry dampness and transform phlegm, circulate and down-regulate qi and resolve nodules. Zhang Huikai et al. [18] confirmed through clinical observation that the combination of Banxia Houpu decoction modified with Banxia as the monarch medicine and omeprazole can regulate serum gastrointestinal hormone levels, improve intestinal microbiota distribution, and significantly improve the clinical symptoms of phlegm qi stagnation pattern GERD patients. The *Medical Records for Clinical Guidance* states that "pungent flavors can open, while bitter flavors can descend". Banxia can also be combined with Huanglian, which has the meaning of "pungent opening and bitter descending", strengthening the function of promoting the circulation of organs and reducing qi, dispelling stagnation and dispersing lumps.

Amomum Fruit and Round Cardamom have the effects of drying dampness and a harmonizing the stomach, regulating qi and transforming phlegm, and are used to treat dampness stagnation pattern. Amomum Fruit has a warm and pungent nature, which can regulate qi and strengthen the Stomach and warm the yang and promote water circulation. The *An Annotated Edition of the Divine Farmer's Classic of Materia Medica* records: "The aroma of sand kernel is warm and fragrant, and the fragrant qi returns to the spleen meridian." Pungent flavour can nourish the kidneys, so it is an essential

medicine for opening the spleen and stomach and harmonizing the qi of middle jiao. The Compendium of Materia Medica records that white Round cardamom can treat "choking on the diaphragm, nausea, and vomiting of acid", and has the ability to "remove cold and dry dampness, open up stagnation, and crack down". These two traditional Chinese medicines have significant effects on reflux and vomiting caused by dampness stagnation in the middle jiao, deficiency of the spleen and stomach. Zhou Xiaomei et al. [19] found through in vitro experiments that the dichloromethane compound contained in sand kernels can reduce the expression of inflammatory factors such as IL-1 $\beta$  in normal gastric mucosal cells and increase the expression of gastric mucosal protective factor PEG2, which has a protective effect on gastric cosa.iao Shuhua et al. [20] demonstrated through clinical trials that cardamom can promote gastrointestinal peristalsis, reduce gastrointestinal bloating, and accelerate gastric emptying. Amomum Fruit and Round Cardamom can be used in combination with traditional Chinese medicine such as Evodia and Alpinia to circulate qi and transform dampness, warm the middle jiao and down-regulate qi. They can also be used in combination with heat clearing herbs such as *Scutellaria Baicalensis*, *Gardenia* and *Anemarrhena* to clear heat and dampness, and to open the spleen and relieve depression.

### 3.2 Qi and Yin Dual Tonifying, Nourishing the Spleen and Stomach, and Using Moistening to Reduce and Treat the Dryness of the Meridians

"Supplement" refers to nourishing the spleen and stomach, nourishing qi and yin. For those with spleen qi deficiency, tonifying the spleen and qi; for those with spleen yang deficiency, tonifying the spleen and warming yang; and for those with stomach yin deficiency, nourishing yin and moistening dryness. Prepared Licorice, *Atractylodes*, Chenpi, and *Codonopsis pilosula* are commonly used drugs by Professor Shen to treat GERD with spleen and stomach weakness. They are derived from the Decoction of Four Noble Drugs. Prepared Licorice and *Codonopsis pilosula* have a sweet and neutral-property, which can nourish and slow down the process. They are essential medicines for tonifying the spleen and nourishing qi. Prepared Licorice is known as the "old man of the country". It can not only be sweet to nourish the middle slowly, but also relieve cough, phlegm, and disperse lung qi. It is suitable for GERD with Spleen and stomach qi deficiency pattern and ascending of lung qi pattern. Feng Yichong et al. [21] have shown through pharmacological research that the active ingredient glycyrrhizin in licorice can correct abnormal secretion of inflammatory factors such as TNF- $\alpha$  caused by exercise stress, inhibit gastric acid secretion, and protect the gastric mucosa. The *Essential Interpretation of the Materia Medica* states: *Codonopsis pilosula* can nourish the spleen and stomach, moisten the lungs and produce fluids, and its functions are not far from ginseng. *Atractylodes* has a sweet, bitter, and warm flavour, which can nourish the spleen and stomach while also drying dampness and promoting diuresis. It is particularly suitable for GERD with spleen deficiency with dampness pattern. The book *Foundation of Medicine* records: "*Atractylodes* dehumidifies and nourishes dryness, harmonizing the middle and nourishing qi". Chen Zhen et al. [22] demonstrated through pharmacological experiments that

the volatile oil of *Atractylodes macrocephala* can significantly improve the small intestine propulsion rate and promote gastric emptying in normal mice and atropine pretreated mice. Chenpi has a pungent, bitter flavour, which spreads and replenishes qi. It can be bitter, dry, and diarrhea inducing, dry and dampness reducing, and returning to the lung and spleen meridians can circulate and down-regulate lung and spleen qi. Clinical practice has proven that Chenpi has significant therapeutic effects on GERD of spleen deficiency with qi stagnation pattern and cold dampness affecting the spleen pattern. Qian Jiahua et al. [23] found through data mining that among the high-frequency drugs used in traditional Chinese medicine to treat gastroesophageal reflux cough, tangerine peel ranks third and is favored by medical practitioners of various schools.

*Radix pseudostellariae*, *Radix Ophiopogonis*, and *Dendrobe* are the core corner medicines used by Professor Shen to treat GERD with stomach yin deficiency pattern. Professor Shen created his own formula, Yangyin Yiwei Tang, after absorbing Ye Tianshi's academic ideas on nourishing yin and benefiting the stomach. The core traditional Chinese medicines are *Radix pseudostellariae*, *Radix Ophiopogonis*, and *Dendrobe*. *Radix pseudostellariae* is a neutral-property, a clear and nourishing medicine, which has a sweet flavour. It can nourish the spleen and lung meridians, and can nourish the qi and yin of the lungs and spleen without stagnation. Ni Jiancheng et al. [24] found through extensive literature research that Taizhishen has pharmacological effects such as anti-inflammatory, cell protective, and immune regulation. It can exert anti-inflammatory effects by activating different signaling pathways, thereby reducing the inflammatory response of esophageal and gastric mucosa. *Radix Ophiopogonis* has a sweet, slightly bitter, and slightly cold flavour, which is beneficial to the lungs and stomach meridians. It has the effects of sweet and cool, nourishing and nourishing the lungs, nourishing yin and stomach, and generating fluids. Modern pharmacological research has shown that *Radix Ophiopogonis* can inhibit gastric acid secretion and enhance pepsinogen synthesis [25]. Zhang Jianwu et al. [26] confirmed through experiments on isolated duodenal smooth muscle in rabbits that *Ophiopogon japonicus* saponin D can inhibit the contraction of isolated duodenal smooth muscle in rabbits. *Dendrobe* belongs to the stomach and kidney meridians, which can benefit the stomach, produce fluids, nourish the kidneys, and nourish yin. The Compendium of Materia Medica Supplements records that *Dendrobium* can "clear stomach heat, eliminate deficiency heat, produce fluids, treat fatigue, and be used as a substitute for tea drinks. It has the effect of stimulating appetite and strengthening the spleen". Zhao Yi et al. [27] observed the intervention mechanism of *Dendrobium officinale* on a mouse model of gastric yin deficiency based on pathways such as cyclic adenosine monophosphate and protein kinase. The results showed that *Dendrobium officinale* can significantly improve the symptoms of the gastric yin deficiency mouse model. The combination of three traditional Chinese medicines has the characteristics of clearing heat with sweet-cold, qi and yin dual tonifying, and lung and stomach dual tonifying, reflecting Professor Shen's diagnosis and treatment philosophy of "using moistening to treat the dryness of the meridians". Professor Shen believes that if GERD patients experience symptoms such as dry mouth, red tongue,

and lack of saliva, they can use *Radix pseudostellariae*, *Radix Ophiopogonis*, and *Dendrobe*. If there is a severe deficiency of gastric yin in clinical practice, it should be supplemented with *Radix polygonati officinalis* and the root of straight Ladybell, etc. to increase the strength of nourishing yin. If there is a deficiency of both qi and yin, adding tonifying spleen and stomach medicines such as *Codonopsis pilosula*, *Atractylodes macrocephala*, and Chenpi on this basis can be effective.

In addition, Professor Shen found that compared to males, the onset of GERD is more prone to females. The *Guidet to Clinical Practice with Medical Case Records* states: "Liver is congenital foundation for woman", so women are more prone to emotional disorders, liver dysfunction, and poor overall qi circulation, which can lead to the onset of this disease. In the *Spiritual Pivot*, it is said: "At the age of seventy, with a weak temper and dry skin", therefore, in old age, if the body is weak and the spleen is deficient due to prolonged illness and lack of nourishment, the spleen will be deficient in qi. Qi deficiency and lack of movement over time can lead to Qi stagnation or Yang deficiency, imbalance of the middle burner, and reflux of stomach qi, resulting in the development of diseases. Therefore, in clinical treatment, attention should be paid to regulating qi flow.

#### 4. Summary

In summary, Professor Shen has unique insights into GERD, which is often related to emotional disorders, irregular diet, old age and physical weakness, as well as external pathogenic factors. Professor Shen believes that the pathological characteristics of GERD lie in three aspects: "deficiency, impediment, and ascending". In the early stages of the disease, exuberant heat in the liver and stomach are the key pathological mechanisms, while in the later stages, stomach yin deficiency is the key pathological mechanism. In terms of treatment, emphasis is placed on "tonifying deficiency, remove stagnation, descending as well as moistening". The combination of medication emphasizes the balance of yin and yang, the combination of cold and warm, the pungent opening and bitter descending, and the reinforcing healthy qi and removing pathogenic factors simultaneously. Common medicinal herbs include *Coptis chinensis*, Hedgehog Skin, *Evodia*, as well as *Radix pseudostellariae*, *Radix Ophiopogonis*, and *Dendrobe* etc. Professor Shen has provided some ideas for the treatment of GERD in clinical practice.

#### References

- [1] Wang Zhonggao, Wu Jimin, Hu Zhiwei, et al. Consensus on multidisciplinary diagnosis and treatment of gastroesophageal reflux disease in China [J]. Chinese Journal of Gastroesophageal Reflux Disease, 2020, 7 (01): 1-28.
- [2] NIRWAN J S, HASAN S S, BABAR Z U, et al. Global Prevalence and Risk Factors of Gastro-oesophageal Reflux Disease (GORD): Systematic Review with Meta-analysis [J]. Sci Rep, 2020, 10(1): 5814.
- [3] Zhou Jinchi. Epidemiological investigation of risk factors related to gastroesophageal reflux disease [D].

- Xi'an; Air Force Medical University of the People's Liberation Army of China, 2022.
- [4] Jia Ning, Tang Yanping, Li Yang. Progress in the Research Mechanisms of Gastroesophageal Reflux Disease in Modern Medicine [J]. Chinese Journal of Surgery of Integrated Traditional and Western Medicine, 2020, 26(01): 179-183.
- [5] Xiao Yinglian. Diagnosis of gastroesophageal reflux disease [J]. Chinese Journal of Medicine, 2023, 58(03): 236-238.
- [6] Gao Ziyun, Yan Yuqing, Tong Tianying, et al. Health-related quality of life and its influencing factors among patients with gastroesophageal reflux disease [J]. Journal of Shanghai Jiaotong University (Medical Science), 2021, 41(12): 1677-1682.
- [7] Li Niuniu, Zhao Song. Research Progress of Traditional Chinese Medicine in the Treatment of Gastroesophageal Reflux Disease [J]. Chinese and Foreign Medical Research, 2024, 22(06): 151-154.
- [8] Zhao Beihua, Zhou Bingduo, Tangxudong. Expert Consensus on the Diagnosis and Treatment of Gastroesophageal Reflux Disease with Traditional Chinese Medicine (2023) [J]. Journal of Traditional Chinese Medicine, 2023, 64(18): 1935-44.
- [9] Zhou Rui, Xiang Changpei, Zhang Jingjing, et al. Research progress on chemical compositions of *Coptidis Rhizoma* and pharmacological effects of berberine [J]. China Journal of Chinese Materia Medica, 2020, 45(19): 4561-4573.
- [10] Tian Jiahao, Shi Congcong, Fei Sujuan. erberine Attenuates Chronic Atrophic Gastritis in Rats by Inhibiting Apoptosis and Inflammation [J]. World Chinese Medicine, 2023, 18(02): 200-205.
- [11] Wei Shuting, Liu Yuanqian, Huang Jian, et al. Research Progress of Chemical component, Medicinal Efficacy and Liver Toxicity of *Fructus Evodiae* [J]. World Chinese Medicine, 2020, 15(23): 3580-3582.
- [12] Cui Guoliang, Wang Manli, Sun Zhiguang. Exploring the effect of Zuojin Pill on inflammatory factors in gastroesophageal reflux disease model rats based on bitter taste receptors and transient receptor potential vanilloid 1 [J]. Chinese Journal of Integrated Traditional and Western Medicine on Digestion, 2023, 31(12): 961-967.
- [13] Li Yuewen, Liu Zhiqiang, Yi Zengxing, et al. Active ingredients-targets-multidimensional action mechanisms of Zuojin Pills [J]. Chinese Traditional Patent Medicine, 2019, 41(05): 1022-1031.
- [14] Li Dong, Qu xiaobo, Li Na, et al. Research on the Organization of Animal Medicine - Hedgehog Skin [J]. Jilin Journal of Chinese Medicine, 2009, 29(05): 422-423.
- [15] Li Xueyong, Kang Weina, Wen Jinping, et al. Protective effect and mechanism of total glucosides of paeony on gastric mucosa in rats with chronic atrophic gastritis [J]. Modern Journal of Integrated Traditional Chinese and Western Medicine, 2023, 32(12): 1638-44+740.
- [16] Liang Xueyan, Jin Xiangqian. Clinical observation of 30 cases of bile reflux gastritis of liver and stomach disharmony type treated with self-formulated Buddha's hand and turmeric decoction. [J]. Heilongjiang Medicine Journal, 2015, 28(06): 1276-1279.
- [17] CHEN X, TANG S A, LEE E, et al. IVSE, isolated from *Inula japonica*, suppresses LPS-induced NO production via NF- $\kappa$ B and MAPK inactivation in RAW264.7 cells [J]. Life Sci, 2015, 124: 8-15.
- [18] Zhang Huikai, Luo Hongwei, Zhang Yajing. Clinical effects of modified Banxia Houpu Decoction combined with omeprazole on patients with gastroesophageal reflux due to Qi-Depression and Phlegm-Stagnation [J]. Chinese Traditional Patent Medicine, 2021, 43(11): 3019-23.
- [19] Zhou Xiaomei, Lian Yong, Luo Mingquan, et al. Study on the chemical composition of *Amomum longiligulare* T. L. Wu and its protective activity of gastric mucosa in vitro [J]. Journal of Hainan Medical University: 1-20.
- [20] Xiao Shuhua, Li Ziqi, Hu uoting, et al. Research advances in chemical components and pharmacological effects of *Amomum kravanh* and prediction of its Q-markers [J]. Chinese Journal of Hospital Pharmacy: 44.21(2024):2548-2556.
- [21] Feng Yichong, Zhou Xiufang, Luo Minyi, et al. Study on the Protective Effect of Glycyrrhizin on Gastric Mucosa Injury [J]. Food Science and Technology, 2023, 48(03): 238-243.
- [22] Chen Zhen, Xia Quan, Huang Zhaogang, et al. Effect of Essential Oils of *Atractylodes macrocephala* Koidz on Gastrointestinal Function of Mice [J]. Chinese Journal of Experimental Traditional Medical Formulae, 2009, 15(08): 66-68.
- [23] Qian Jiahua, Xue Honghao, Lu Chenhua, et al. Data Mining Study on the Medication Laws of TCM in the Treatment of Gastroesophageal Reflux Cough [J]. Journal of Emergency in Traditional Chinese Medicine, 2021, 30(09): 1532-1540.
- [24] Ni Jiancheng, Fan Yongfei, Ye Zuyun. Research progress on chemical constituents, pharmacological effects and application of *Pseudostellariae Radix* [J]. Chinese Traditional and Herbal Drugs, 2023, 54(06): 1963-1977.
- [25] Wan Meixu, Yuanjing, Zhang Yanxin, et al. Research progress on pharmacological effects of extracts and active components of *Ophiopogon japonicus* [J]. Drug Evaluation Research, 2023, 46(08): 1819-1826.
- [26] Zhang Jianwu, Sun Lang, Liu Xin, et al. The relaxation effect and mechanism of *Ophiopogon saponins D* on duodenal smooth muscle. [J]. Chinese Journal of Gerontology, 2019, 39(12): 3011-3013.
- [27] Zhao Yi, Lu Xuefeng, Fang Hong, et al. Mechanism of *Dendrobium officinale* from Longhu Mountain in Jiangxi Province on Wei Yin Deficiency Mice [J]. Chinese Journal of Integrated Traditional and Western Medicine: 1-9.