

# Thoughts and Methods of Treating Precancerous Lesion of Gastric Cancer from the Perspectives of “Nutrient-Defense Regulation”

Yuan min<sup>1</sup>, Jianping Hui<sup>2,\*</sup>

<sup>1</sup>Shaanxi University of Chinese Medicine, Xianyang 712046, Shaanxi, China

<sup>2</sup>Affiliated Hospital of Shaanxi University of Chinese Medicine, Xianyang 712000, Shaanxi, China

\*Correspondence Author

**Abstract:** *The nutrient-defense emanates from the subtle qi of the spleen and stomach, which has nutritional and defensive functions. The gastric mucosa is an important place for digestion and can also defend against the invasion of foreign pathogens. Nutrient-defense and the gastric mucosa are similar in function. Exploring the etiology and pathogenesis of precancerous lesion of gastric cancer (PLGC) from the theory of “nutrient-defense regulation” and combines the physiological and pathological characteristics of the spleen and stomach. It is considered that the occurrence of PLGC is centered on the combination of toxin and blood stasis, and the deficiency of nutrient-defense and Qi-Yin is the key, thus resulting in corresponding pathological changes and clinical symptoms. Treatment should repair the gastric mucosal barrier and improve the clinical efficacy of PLGC by regulating nutrient-defense and balancing yin and yang.*

**Keywords:** Precancerous lesion of gastric cancer, Chronic atrophic gastritis, Nutrient-Defense regulation, Traditional Chinese medicine, Thoughts and methods.

## 1. Introduction

Gastric carcinoma (GC) ranks fifth among malignant tumors in terms of incidence and mortality rate, and is one of the most common tumors in the world. East Asia is one of the regions with a higher incidence of GC, and the mortality rate of GC is greater than the corresponding incidence, mainly due to late diagnosis [1]. Gastric cancer often develops from long-term precancerous lesion of gastric cancer (PLGC), which follows the Correa pattern of enteric gastric cancer and is a series of pathological changes closely related to gastric cancer. Therefore, PLGC is the “link” between chronic gastritis and gastric cancer, and is a key stage to stop the development of gastric cancer and a turning point in the cascade treatment of gastric cancer. So far, Western medicine has mainly included anti-*Helicobacter pylori*, drugs that inhibit gastric acid and/or protect the gastric mucosa, and endoscopic treatment [2], which can alleviate clinical symptoms to a certain extent, but usually have no clear efficacy in reversing PLGC. Under the guidance of TCM syndrome differentiation and treatment, traditional Chinese medicine can slow down PLGC through various methods such as anti-*Helicobacter pylori*, anti-inflammation, reducing aerobic glycolysis, preventing apoptosis, regulating gastrointestinal hormones and immune function, and targeting signal pathways. These methods may even reverse the development of the disease [3].

Traditional Chinese medicine usually classifies PLGC as “stomach distension” and “noise” based on clinical symptoms. It believes that the disease site is in the spleen and stomach of the middle Jiao. The causes include congenital physical deficiency, acquired bad life and eating habits, emotional disorders, and the invasion of external diseases and other factors [4]. Professor Shen Shuwen, a famous traditional Chinese medicine doctor in Shaanxi Province, based on the basic theory of traditional Chinese medicine and combined with his own years of clinical experience in traditional Chinese medicine, proposed that the key pathogenesis of PLGC is “the intersection of poison and blood stasis”, damage

to the gastric collaterals, and for a long time, deficiency of both Nutrient-Defense and Qi-Yin, and body resistance weakened while pathogenic factors prevailing. Treatment needs to start from two aspects: “strengthening healthy qi and eliminating pathogenic factors, and tonification and purgation in combination” [5]. The Nutrient-Defense originates from the subtle qi generated by food and drink through the spleen and stomach. It enhances the body’s nutrition and immune system, ensures the body’s normal physiological functions, and plays a key role in resisting external pathogens. The gastric mucosa is a key part of digestion and is also resistant to invasion by external pathogens. In terms of function, the Nutrient-Defense and gastric mucosa show similar characteristics. Starting from a new perspective of “Nutrient-Defense regulation”, this paper discusses its theoretical connotation, the etiology, pathogenesis and treatment of PLGC under the state of “imbalance between Nutrient-Defense”, and strives to introduce new thoughts and methods for the clinical diagnosis and treatment of PLGC.

## 2. Theoretical Connotation of “Nutrient-Defense Regulation”

The theory of nutrient-defense originates from the Huangdi Neijing (The Yellow Emperor’s Inner Canon), which records: “Grain begins in the stomach, and its essence first comes from the two energizers of the stomach to irrigate the five internal organs, and is divided into two lines, which are the way of nutrient-defense.” “The Nutrient qi is the essence of the water and valley... It runs through the five internal organs and connects the six hollow organs.” “The Defensive qi is the powerful part of the essence of water and grain, scattered between the muscles and in the membrane tissues of the five internal organs.” This theory shows that the Nutrient-Defense is transformed into the essence of water and grains. It not only reaches between the skin and hair, but also fills the viscera internally and circulates throughout the body, and also travels through the gastrointestinal tract, nourishing the viscera and

resisting external evil. The digestive tract mucosa is one of the tissues that communicate with the outside world. Like the skin, it is composed of epithelial tissue and connective tissue. Rich nerves and blood vessels are distributed on it. The Nutrient qi circulates in the veins and between the gastric mucosa to play the function of nourishing the viscera. The theory of Xuanfu is introduced into the Huangdi Neijing, which refers to the sweat holes in the human skin. Liu Wansu, one of the four great masters in the Jin and Yuan Dynasties, proposed on the basis of previous research: "Xuanfu is a part that belongs to everything, including human organs, fur, muscles, fascia... It is the road for qi to enter, exit, ascend and descend." Expanding the concept of Xuanfu to the channels for gas and liquid movement in various tissues of the human body, while the gastric mucosa can secrete gastric juice, and certain substances in the stomach can generate gas, which is similar to Liu Wansu's understanding of Xuanfu. Therefore, the functions of Defensive qi to enrich the body surface tissues, open and close sweat pores, and resist exogenous pathogens also have a similar effect on the gastric mucosa. When the Nutrient-Defense are out of balance, the gastric mucosa is more susceptible to evil forces, and its insufficient nourishment by the Nutrient qi and blood together leads to the formation and progress of PLGC.

The holism concept is an important aspect of the basic theory of traditional Chinese medicine. When explaining the etiology, pathogenesis, and syndrome differentiation and treatment of PLGC, we must not only start from the reconciliation of the Nutrient-Defense, but also grasp the fundamental characteristics of the balance of Yin and Yang in the human body. Huangdi Neijing: "The Nutrient qi and Defensive qi are together, Yin and Yang have been harmonized", "Carefully observe the Yin and Yang and adjust them to achieve the balance of Yin and Yang", which shows that the imbalance of Nutrient qi and Defensive qi may also cause the imbalance of Yin and Yang, and emphasizes the importance of maintaining the balance of Yin and Yang in the human body. Nutrient-Defense regulation refers to coordinating Ying Yin and Wei Yang to make them run on the right track and perform their respective duties, so as to achieve the harmony of yin and yang in the internal organs, reduce the risk of PLGC and help it reverse.

### 3. Etiological Understanding of PLGC based on "Imbalance between Nutrient-Defense"

At present, the cause of PLGC has not been clarified in traditional Chinese medicine and Western medicine, and successive generations of doctors believe that this disease is related to genetic endowment, eating habits, emotional imbalance, age, physique and external pathogenic factors based on traditional Chinese medicine theory. These single or multiple factors interact to cause persistent damage to the gastric mucosa, further affecting the function of the spleen and stomach, leading to imbalance of Nutrient-Defense, thereby accelerating the formation and deterioration of PLGC.

**3.1 Native Endowment** Native endowment deficiency is mostly related to GC family history. Although only about 10% of cases show familial aggregation, family history of GC is still one of the most important risk factors for PLGC due to the high incidence of GC [6]. Li Zhongzi pointed out in

Yizhong Bidu (Essential Readings for Medical Professionals): "The foundation of innate is in the kidney, and the foundation of the acquired is in the spleen. "The function of the spleen is to absorb and transform subtle substances in food, and its operation depends on the warm coordination of kidney Yang. The kidneys are responsible for regulating water metabolism and storing essence throughout the body, and their function depends on the nourishment of substances transported by the spleen. Therefore, insufficient endowment and weakening of kidney yang will cause fire to not warm the soil, spleen transport will be derelict, and gastric mucosal lesions will occur over time; It further damages the ability of the spleen and stomach to transport water and grains, resulting in a decrease in nutrient substances. The Nutrient qi and Defensive qi are not enough to effectively nourish and replenish the native essence, and the root of the kidney is further depleted, and the cycle is repeated, accelerating the development of PLGC.

**3.2 Eating Habits** Li Dongyuan mentioned in Piwei Lun (Treatise on the Spleen and Stomach): "If the diet is out of control..... then the spleen and stomach are injured", and bad eating habits are the easiest to damage the spleen and stomach. Patients with chronic atrophic gastritis (CAG) are at high risk of GC, and the incidence of CAG is on the rise in China [7]. High-salt food, cold and spicy food, overeating, irregular diet are all risk factors for patients with CAG. Reasonable dietary structure can reduce the incidence of CAG, and increasing the intake of fresh fruits can reduce the risk of GC [8].

**3.3 Emotional Disorders** Forefathers have long recognized the relationship between the Nutrient qi and Defensive qi and emotional changes. Huangdi Neijing mentions: "The blood and qi have been reconciled, the Ying and Wei have been connected, the five internal organs have been formed, and the spirit is stored in the heart." This shows that only when the human body's qi and blood are in harmony and the Nutrient qi and Defensive qi are unblocked can there be the five internal organs and consciousness. The Nutrient qi and Defensive qi are intertwined and cycle back and forth. With the meridians as channels, Wei runs outside the pulse and Ying runs in the pulse. Only when the Nutrient qi and Defensive qi are harmonious can they be physically and mentally healthy. Li Dongyuan mentioned in his Piwei Lun: "Joy, anger, worry, and fear consume Promordial qi." When a person's emotions are not smooth, Promordial qi is always the most easily damaged, resulting in insufficient growth of the Nutrient qi and Defensive qi. In a cross-sectional study of 118 patients with CAG, more than 30% of the patients were in an anxiety state and more than 20% suffered from depression. Based on Logistic regression analysis, it was found that patients with low sleep quality were more likely to experience anxiety and depression [9]. Huangdi Neijing has a saying: "The old man's qi and blood decline, and their Nutrient qi declines less, while the Defensive qi is depressed internally, so there is insufficient energy during the day and it is difficult to fall asleep at night. "Poor mental mood, severe liver qi stagnation will damage the spleen, resulting in abnormal rhythm of the spleen and stomach. The production and circulation of the spleen and stomach are blocked, which in turn leads to sleep disorders and aggravates emotional disorders, causes abnormal secretion of cerebrointestinal peptides and disorders of gastrointestinal function, which can eventually lead to

CAG [10].

**3.4 Age and Physique** Patients with PLGC are mainly concentrated in the middle-aged and elderly people. A multi-center cross-sectional study pointed out that age is one of the important independent risk factors for PLGC [11]. All diseases are caused by the decline of the spleen and stomach. Old age is a stage of aging of the body and the decline of physiological functions. Aging of the body is mainly caused by the deficiency of the viscera and the imbalance of defensive energy nutrients and blood. Studies have shown that gastric mucosal cell aging and *Helicobacter pylori* (Hp) infection activates the CXCR2 signaling pathway and accelerates the progression of gastric precancerous lesions [12]. Among the constitutional types of CAG patients, phlegm dampness constitution is the most common solid constitution, while deficiency constitution is dominated by qi deficiency constitution. The proportion of qi deficiency constitution in women is significantly higher than that in men [13]. “Women are born with the liver”, The liver’s function of dredging and reaching is blocked, and the wood is too abundant and the soil is excessively restrained, resulting in the weakening of the spleen’s transportation and transformation function and insufficient metaplasia of defensive energy nutrients and blood. Insufficient nourishment of the gastric mucosa reduces its ability to resist exogenous pathogens, making it more likely to be infected with Hp. There is a saying in Huangdi Neijing: “Fat food causes too much calories in the human body, and sweets make people feel bloated.” If you consume a high-sugar and greasy diet for a long time, too much phlegm and dampness will be produced in the your body, which in turn will form a phlegm and dampness constitution. The function of the spleen and stomach is hindered by phlegm dampness, and the subtle substances generated by it are insufficient. In addition, the function of the spleen and stomach to transfer the subtle substances is blocked and the gastric mucosa is undernourished, which leads to gland atrophy. Patients with phlegm-dampness constitution are more likely to be infected with Hp, which is moist and sticky. In a phlegm-dampness environment, inflammation is more likely to spread diffusely in the stomach and is difficult to eradicate, promoting the transformation of gastric mucosa from precancerous state to gastric cancer.

**3.5 Invasion of External Pathogenic Factors** *Helicobacter pylori* infection is one of the decisive factors in the occurrence of CAG and GC [14], The DNA methylation it induces can lead to the inactivation of tumor suppressor genes [15]. The integrity of gastric mucosal barrier is closely related to the pathogenesis of PLGC. The gastric mucosal barrier is a protective barrier on the surface of the gastric mucosa. It is composed of various elements such as epithelial cells, intercellular connections, and mucus. It plays an important role in protecting the gastric mucosa from pathogenic microorganisms, toxins and other harmful substances. When the gastric mucosal barrier is continuously damaged by inflammation, it accelerates the key pathological link of inflammation-cancer transformation, leading to the occurrence of pathological changes such as CAG, Intestinal metaplasia (IM), and Dysplasia (Dys), and ultimately developing to GC.

Therefore, the cause of PLGC is closely related to age, family

history, eating and living habits, anxiety and depression, and Hp infection. Multiple factors work together to cause persistent damage to the gastric mucosa, which in turn damages the self-repair function of the spleen and stomach. The imbalance between the Nutrient qi and Defensive qi and the imharmony of yin and yang promote the pathological changes of PLGC and the occurrence of clinical symptoms.

#### **4. The Pathogenesis of PLGC based on “Disharmony between Nutrient-Defense”**

##### **4.1 The Intersection of Toxic Substances and Blood Stasis is the Core of the Disease**

The spleen and stomach are the source of the Nutrient qi and Defensive qi. The gastric mucosa is the digestive organ of the human body and an important part of the immune system. After long-term clinical practice, many doctors have concluded that in the generation and evolution of PLGC, “poison”, “blood stasis” and “phlegm” are key pathological products. For example, Professor Wang Yangang proposed the theory of “core pathogenesis view”, believing that the accumulation of dirty toxic pathogens is the key to the pathogenesis of PLGC disease [16]. Professor Shen Shuwen emphasized that “the intersection of toxic substances and blood stasis” is the core pathogenesis of the evolution of PLGC to GC [5]. According to the description in Huangdi Neijing: “It is stuck in the meridians, the Nutrient qi and Defensive qi is unbalanced and circulation is not smooth. “It shows that once the circulation of the Nutrient qi and Defensive qi is abnormal, it will lead to blood stasis and pulse stagnation, and phlegm retention will be generated in the body. Pathological products such as blood stasis, phlegm, and retained fluid are blocked in the pulse channel, resulting in poor circulation of the pulse channel, which can cause a series of pathological changes in the gastric mucosa. Sun Simiao, in *Beiji Qianjin Yaofang* (Essential Prescriptions Worth a Thousand Gold for Emergencies), expressed the changes in qi caused by diet in healthy people as: “If qi can move up and down normally, the functions of the five internal organs are balanced and coordinated, the blood vessels are smooth and fluent, and the mental state is peaceful. “It is pointed out that only when the movement of qi remains smooth can the subtle substances of water and grain nourish the five internal organs, the blood vessels and spirit, and enable the physiological functions of the internal organs to function normally. Otherwise, diseases will occur. Pathological products such as blood stasis, phlegm, and retained fluid produced by the imbalance of spleen and stomach function are the intrinsic aspects of the toxic pathogens in the course of PLGC, and on the other hand, they are external Hp infection. Hp infection is the initial stage of the inflammation-cancer transformation cascade, and the persistent inflammatory environment and metaplastic changes in gastric mucosa induced by Hp infection are key pathological links. Hp invades the gastric mucosa, and the Defensive qi rises to fight against it. This can lead to the imbalance of pro-inflammatory factors and anti-inflammatory factors and the disorder of the mucosal immune microenvironment, and ultimately induce metaplastic changes and immune escape in the gastric mucosa [17].

##### **4.2 The Deficiency of both Nutrient-Defense and Qi-Yin is**

### the Key Condition for the Disease

Many doctors believe that the pathogenesis of PLGC is diverse, but it is nothing more than deficiency causing excess or deficiency caused by excess. Professor Shen Shuwen believes that “deficiency of both Qi and Yin” is the key condition for the emergence of “obstruction of poison and blood stasis” and is also the basis of physical deficiency in the occurrence and development of PLGC [18]. Leijing (The Classified Canon) has a saying: “If skin perception weakens or disappears, you will not feel the pain, itching, cold and heat. If your limbs are weak, you cannot move... If both the Nutrient qi and Defensive qi are deficient, both blood and qi will be sick. Blood deficiency will lead to weakened consciousness. If qi deficiency is deficient, limbs will become weak. “The transportation and transformation of the spleen and stomach is dereliction of duty, and the formation of Wei Yang and Ying Yin is insufficient. Deficiency of the Nutrient qi and Defensive qi and the qi deficiency and inability to move, resulting in sluggish circulation of the Nutrient-Defense. In the long run, the Nutrient-Defense will be blocked. In addition, the Nutrient qi and blood deficiency will lead to loss of nourishment, and eventually lead to insensitive gastric mucosa, flaccidity and disuse., both sensory and movement obstacles appear. Therefore, insufficient Nutrient-Defense is also the key pathogenesis of PLGC. Studies have found [19], [20] that during the development of CAG, Hp infection, chronic inflammation of gastric mucosa, atrophy of solid glands, and reduced gastric acid secretion affect the absorption of nutrients such as folic acid and vitamin B12, which can eventually lead to neuropathy. In the gastric mucous membrane, the nerve conduction velocity is slowed down, the ability to perceive pain, gastric peristalsis and endocrine function are reduced, and the clinical symptoms are full of the gastric cavity, burning pain and discomfort.

## 5. Treatment of PLGC based on “Disharmony between Nutrient-Defense”

Based on the pathogenesis of PLGC, deficiency of healthy qi and blockage of pathogenic qi are the main factors. During treatment, attention should be paid to strengthening the body and eliminating pathogenic factors, coordinating the Nutrient qi and Defensive qi, dredging meridians, strengthening the spleen and promoting tissue repair.

### 5.1 Promoting Blood Circulation to Remove Meridian Obstruction

Chao Yuanfang mentioned in Zhubing Yuanhou Lun (General Treatise on the Cause and Symptoms of Diseases): “Blood and qi are blocked and become Pi-syndrome (a lump in the abdomen)”. Blood stasis is one of the key pathological factors in the occurrence and development of PLGC. Therefore, in the treatment of PLGC, the method of promoting blood circulation to remove meridian obstruction is commonly used. In clinical practice, relevant prescription drugs can be used to alleviate the transformation of gastric mucosa into inflammation and cancer, inhibit gastric mucosal atrophy, block the process of IM and Dys, reduce angiogenesis and regulate inflammatory factors, and ultimately inhibit the growth of tumor cells [21]. Huangdi Neijing has a saying:

“The disease has been deepened for a long time, and the operation of the Nutrient-Defense will be blocked”. Defensive qi is stagnant, Nutrient qi is blocked, and the meridians are not smooth. So the treatment should be based on the principle of nourishing qi and blood, promoting blood circulation to remove meridian obstruction. Prescriptions such as Shixiao San, Huangqi Guizhi Wuwu Decoction can be used, combined with traditional Chinese medicines such as Curcuma and Salvia to promote blood circulation. Studies have found [22], that Huangqi Guizhi Wuwu Decoction promotes the recognition and elimination of tumor cells by the immune system by regulating T cell subsets, while upregulating the activity of SOD, reducing the content of malondialdehyde, enhancing the body’s antioxidant effect, inhibiting neoangiogenesis, and cutting off the blood supply of tumor cells. These multiple effects work together to inhibit tumor growth and spread. Among the main active ingredients of Shixiaosan, quercetin,  $\beta$ -sitosterol, kaempferol can regulate the activity of inflammatory factors and the expression of related genes, play an anti-inflammatory and immunomodulatory role, and inhibit the proliferation and invasion of gastric cancer cells. Drugs such as Curcuma Zedoary, Salvia Miltiorrhiza, and Rhizoma Chuanxiong can accelerate the repair of the gastric mucosa and interrupt or even reverse the process of PLGC [23]. In the CAG rat model, the hedgehog signaling pathway was inhibited, and Astragalus, Pseudo-ginseng and other blood-activating drugs could activate this pathway, thereby inhibiting gastric mucosal atrophy [21]. Therefore, activating blood circulation and dissolving blood stasis and dredging meridians can delay the inflammation-cancer transformation process of the gastric mucosa and reduce the symptoms of stomach fullness and pain in patients.

### 5.2 Dispelling Pathogenic Factors and Detoxifying

Ye Gui proposed that “too much moisture in the body for a long time will lead to the accumulation of dirty pathological products”. Hp infection and the evil of damp and hot in the body cause turbidity and poison, hinder the normal operation of the spleen and stomach function and make the veins unobstructed, resulting in the infiltration of gastric mucosal inflammation to a deeper layer and difficult to remove, the mucosa gradually bulges and erodes, and even precancerous lesions. Therefore, it is advisable to dispell pathogenic factors and detoxify, and use traditional Chinese medicine with the effect of clearing heat and detoxifying. Professor Liu Qiquan believes that the drug should be used according to the depth of heat- toxin [24]. If the poison is light and the heat is heavy, add Dandelion, Gypsum Fibrosum, Scutellaria Baicalensis and other traditional Chinese medicine for clearing heat. If the poison is heavy and the heat is light, and the Scorpion, Nidus Vespa are mainly detoxified. Those in between are suitable for Scutellaria Barbata, Pleione Bulbocodioides, Hedyotis Diffusa to clear heat and detoxify. Based on the core pathogenesis of PLGC, Professor Shen Shuwen developed the Jinguo Weikang Fang with the effects of detoxifying, dissolving blood stasis and dispersing qi, showed good therapeutic effects in clinical application [25]. In its formula, Scutellaria Barbata, Poncirus Trifoliata, Polygonum Cillinerve (Nakai) Ohwi, and Radix Pseudostellariae have immunomodulatory and anti-tumor effects to varying degrees. The sovereign drug of the formula Scutellaria Barbata, which

has a pungent flavour, and is bitter and cold in nature, which makes this medicine play the effect of clearing away heat and detoxifying, dispersing stasis and eliminating indigestion. The *Poncirus Trifoliata*, which has the effect of regulating gasification and stagnant dispersion, has a pungent and bitter flavour, is used as the minister drug. The pungent flavour can make the movement of qi disperse upward, and the bitter flavour can make the qi settle downwards. These two together make the Nutrient qi and Defensive qi run smoothly, and play a role in eliminating stasis and dispersing knots. *Polygonum Cillinerve Ohwi*, which has a bitter flavour and cold in nature, is used as a assistant drug to further strengthen the effect of *Scutellaria Barbata* in clearing heat and detoxifying, and at the same time strengthening the effect of sovereign drug and minister drug to activate blood circulation, disperse blood stasis and relieve pain. *Radix pseudostellariae* has the characteristics of sweet and slightly bitter flavour, which has the effect of nourishing Qi, engendering liquid and tonifying spleen. And in this formula, it is to make up for the deficiency of Qi and Yin, at the same time, it is also a assistant drug. The whole prescription works together to clear heat and detoxify, circulate qi and disperse knots, and nourish and benefit health. Therefore, the use of the method of clearing heat and cooling the Nutrient qi and eliminating blood stasis, and at the same time strengthening the effect of Defensive Qi in dispelling evil and detoxifying, can alleviate the imbalance of spleen and stomach qi caused by the imbalance of the Nutrient-Defense, dampness, heat and poison stasis, so as to reduce the symptoms such as hiccups, distention and fullness, and pain.

### 5.3 Nourishing Qi and Nourishing Yin

Qi and Yin deficiency is the key factor in the occurrence and development of PLGC. Huangdi Neijing once said: “Yang qi can promote the transformation of subtle substances into functional activities, and Yin qi can make substances synthesize tangible organisms and material foundations”. Professor Xie Jingri believes that the former deficiency refers to the lack of the qi of spleen and stomach and weakness in transport, while the latter deficiency refers to the loss of too much stomach yin in the long-term course of the disease, resulting in insufficient regeneration and repair ability of the gastric mucosa. Based on this theory, the method of balancing Yin and Yang is used to treat CAG [26]. As stated in Jin Gui Yi (Supplement to the Essentials from the Golden Cabinet): “Those who are in consumptive disease and have insufficient in the Nutrient-Defense, it is suitable to adjust with the traditional Chinese medicine that have the sweet, sour and pungent flavour.” “The stomach is the source of defense, and the spleen is the foundation of the ying. When the flavour of sweet and pungent are combined, and the spleen and stomach are healthy and are the Nutrient-Defense smooth”. When the function of Yang qi is insufficient, it is usually combined with pungent and sweet traditional Chinese medicines such as *Cassia Twig*, *Poria Cocos*, *Licorice*, *Rhizoma Zingiberis*, *Cardamum*, and *Rhizoma Anemarrhenae* to help restore the function of yang qi and strengthen the spleen. At the same time, in order to make up for the lack of Yin qi, it can be compatible with sweet and sour traditional Chinese medicines, such as *White Peony Root*, *Radix Ophiopogonis*, *Dendrobium*, *Adenophora Stricta*, and *Schisandra Chinensis*. The combination of pungent and sweet flavour can transform Yang qi, and the combination of sour and sweet flavour can

nourish Yin qi. If the Yang qi is strong, the wei qi is strong, and if the Yin qi is sufficient, the ying qi is sufficient. So that the Yin, Yang and Nutrient-Defense can be replenished, so as to achieve the effect of reducing the core pathogenesis of “the intersection of toxic substances and blood stasis”.

## 6. Conclusion

The development of PLGC into GC is a chronic inflammation-cancer transformation cascade. Based on the theory of “harmony between Nutrient-Defense”, combined with the physiological and pathological characteristics of the spleen and stomach, it is concluded that PLGC is caused by native endowment, eating and living habits, emotional distress, age, physique and external evil invasion and other factors. Its pathogenesis is based on “the intersection of toxic substances and blood stasis”, which runs through the disease process, and “deficiency of both Nutrient-Defense and Qi-Yin” is the key condition for the disease. The imbalance between Nutrient-Defense and, and body resistance weakened while pathogenic factors prevailing, these can lead to the obstruction of pathogenic factors and meridians, and loss of nourishment of gastric mucosa. The simultaneous insufficiency and excessive, and if they are not delayed, they will develop into PLGC. As stated in Wenbing Tiaobian (Systematic Differentiation of Warm Diseases): “Treatment of the middle jiao must be balanced like a scale, maintaining the balance of the qi movement and avoiding bias. “When treating PLGC, it is emphasized to take into account both strengthening the body resistance and eliminating pathogenic factors, and maintaining the balance between Yingyin and Weiyang in the spleen and stomach in order to “Nutrient-Defense regulation”.

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