



Treatment of Functional Gastrointestinal Disorder in Chinese Medicine

By Dr. Lin, Tsan-Hon

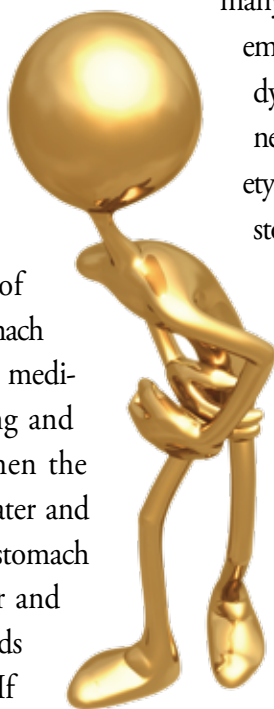
Clinically, Functional Gastrointestinal Disorder (FGID) consists mainly of upper gastrointestinal tract symptoms, such as: upper abdomen distension or tenderness, stomach fullness after meal, appetite decrease, belching, nausea, vomiting, heartburn, or chest pain. However, laboratory testing, endoscopy, nor abdomen ultrasonography showed any evidence of gastroesophageal reflux, peptic ulcer, liver, gallbladder, pancreas and other generalized organic disease, and the symptoms last for more than 4 weeks. In Chinese medicine, there are no specific medical terms for this disease, and this is separately described in disease terms like: "wei-tong" (stomach pain), "pi-man" (glomus and fullness), "cao-za" (clamoring stomach), "e-ni" (hiccup), "na-yun" (appetite dizziness), "wei-huan" (stomach slowness).

The point of pathological change of FGID is at the stomach. The spleen and stomach are related exteriorly-interiorly. In Chinese medicine theory, the spleen governs upbearing and the stomach governs downbearing. When the spleen upbears the clear, the essence of water and grains can then be transported. When the stomach downbears the turbid, the waste of water and grains can then be conveyed. It all depends on the liver to controls these functions. If

the liver dysfunctions, so will the spleen and the stomach affected, and would cause symptoms like stomach fullness, abdomen distension, belching, and acid regurgitation. Therefore, when treating FGID, we not only treat the stomach, as the clinical symptoms suggested, but also have to treat the liver and the spleen as well.

PATHOLOGICAL MECHANISM

The pathological mechanisms of FGID have not yet been fully understood, but it is known to be affected by many factors, especially by gastrointestinal motility and emotional factors. Upper gastrointestinal tract motility dysfunction may lead to symptoms like stomach fullness and distension, belching, and early satiety. In anxiety and depression patients, the motility and secretion of stomach is severely inhibited. Researches showed that holding back anger can significantly delay stomach emptying. In Chinese medicine, there are no specific disease terms for FGID, but the pathophysiology of this disease has been described in early writings by its clinical symptoms. For instance in *Yi-Xue-Zhen-Zhuan*, it was explained: "when stomach area pain occurs, they are certainly caused by binding of phlegm, food, and induced by seven emotion, and nine qis." The pathological mechanism can include the following:



■ Seven-emotion internal damage:

Seven-emotion includes joy, anger, anxiety, thought, sorrow, fear and fright. Joy causes *Qi* to slacken. Anger causes *Qi* to rise. Thought causes *Qi* to bind. Sorrow causes *Qi* to disperse. Fear causes *Qi* to precipitate. Fright causes disruption of *Qi*. They can all affect the internal dynamics of *Qi*. Liver depression and *Qi* stagnation invade stomach is most frequent.

■ Dietary irregularities:

Dietary intakes rely on the spleen and the stomach to digest and absorb. When excess eating or hunger, or imbalanced diet, this damages the spleen and the stomach, and would affect its functions. This would create dampness, phlegm and heat, and affect the absorption, digestion, movement and transformation of the spleen and the stomach, and lead to abdomen fullness and distension, belching, acid regurgitation and loss of appetite.

■ Spleen-stomach vacuity:

Vacuity of the spleen affects movement and transformation, slows digestion, creates dampness, and leads to abdomen distension. The stomach is exteriorly-interiorly related to the spleen, if the spleen vacuity occurs, so will the stomach weakness occur, and this would cause appetite to decrease.

■ Misuse of precipitate method:

If external evil invades the human body, and wrong treatment method was used, the center *Qi* will be damaged. The exterior evils would damage the stomach, and cause heat and cold to bind in the center burner, affect the upbearing and downbearing *Qi* dynamics, and thus cause this disease.

DIAGNOSIS AROUND GROUPING

Diagnosis criteria of FGID are as following:

1. Patients showed upper stomach distension, early satiety, decreased appetite, belching, nausea, vomiting, heartburn, post-sternum pain, or stomach upset for over 4 weeks.
2. Endoscopy revealed no sign or previous history of

ulcer, erosion, tumor or neoplasm, or esophageal carcinoma.

3. Laboratory testing, abdomen ultrasonography, plain-film x-rays excluded liver, gallbladder, pancreas and intestine lesions.
4. No diabetes, connective tissue diseases, psychiatric disorders and other general diseases.
5. No abdominal surgery history.
6. After 2 to 5 years of follow-ups and at least 2 endoscopies, no new lesions were found.

Criteria 1 to 4 are for standard diagnosis, 5 and 6 are additional for researches.

GROUPING IN MODERN MEDICINE

Clinical variation of FGID can be characterized by clinical manifestation:

■ Motility dysfunction type:

Symptoms are caused by delayed emptying of stomach or dysfunction of small intestine. Often patients present early satiety, nausea, and aftermeal abdominal fullness and distention, especially when large amount of food were ingested.

■ Ulcerative type:

Symptoms characterized by upper abdomen pain, similar to peptic ulcers, but without hyperacidity, and poor response to antacids.

■ Regurgitation type:

Patients express typical gastroesophageal reflux symptoms, such as acid regurgitation, heartburn, and post-sternum burn, but endoscopy and upper barium study revealed no sign of regurgitation esophagitis.

■ Non-specific type:

Most of the symptoms in the above types often overlap. This is the type for those cannot be grouped into above types.

GROUPING IN CHINESE MEDICINE

Combining TCM classics and clinical studies

data, FGID in Chinese medicine can be mainly separated into 3 types, **spleen-stomach vacuity type**, **insufficiency of stomach yin type**, and **liver-stomach disharmony type**. However, damp obstruction, depressed heat, and food stagnation are all caused by dysfunctions of bowel and visceral. These symptoms can worsen the condition and even complicated the disease. They will be classified as “combined types”. The clinical manifestations of these groups are as following:

■ Spleen-stomach vacuity type:

Abdomen dull pain that feels better with pressure and after warm food, decreased food taste, lusterless facial complexion, fatigued spirit and lack of strength, bland taste in the mouth and no thirst, vomiting of clear water, pale tongue, white tongue fur, fine weak or slow moderate pulse.

■ Insufficiency of stomach yin type:

Abdomen dull pain, clamoring and hungry stomach, dry mouth and lips, dry bound stool, red tongue and scant tongue fur, fissured tongue in the middle or peeling tongue fur, fine rapid pulse.

■ Liver-stomach disharmony type:

Abdomen distension and pain radiates to chest, belching, hiccup, nausea, vomiting, loss of appetite, heartburn, inhibited defecation, and emotion induces or aggravates symptoms, red tongue, thin white tongue fur, stringlike pulse.

COMBINED TYPES

■ Damp obstruction:

Abdomen glomus and fullness, nausea, vomiting of clear water and phlegm-drool, slimy tongue fur, slippery pulse.

■ Depressed heat:

Abdomen glomus and fullness, acid regurgitation, heartburn, poor appetite, belching with of food mal-odor, constipation, thin yellow tongue fur, rapid string-like pulse.

■ Blood stasis:

Abdomen pain like stabbing of a needle, dark tongue with stasis macule or speckle, rough pulse.

■ Food stagnation:

Abdomen distension, belching, loss of appetite, vomiting of sour putrid contents and aggravates when eat, eases after vomiting, foul-smelling stool with undigested contents, thick slimy tongue fur, slippery replete pulse.

TREATMENT IN CHINESE MEDICINE

■ Spleen-stomach vacuity type:

Formula: Official Mongolia bark, fresh ginger, pinellia, licorice, and ginseng decoction.

Method: Supply vacuity and fortify the spleen, warm the center and move Qi.

Official Mongolia bark, Fresh ginger, Pinellia, Licorice, Codonopsis.

■ Insufficiency of stomach yin type:

Formula: Wu Ing He Ji Jia Jian.

Method: Supply stomach yin, clear heat and control acid.

Cuttlefish bone, Dandelion, Dried rehmannia, Ophiopogon, Peony, Licorice.

■ Liver-stomach disharmony type:

Formula: Si Ni San and Chen Xiang Jiang Qi San Jia Jian.

Method: Relieve stagnancy of vital energy of the liver, harmonize the stomach and downbear counter-flow.

Bupleurum, White peony, Unripe bitter orange, Aquilaria, Cyperus, Amomum, Corydalis, Toosendan, Licorice.

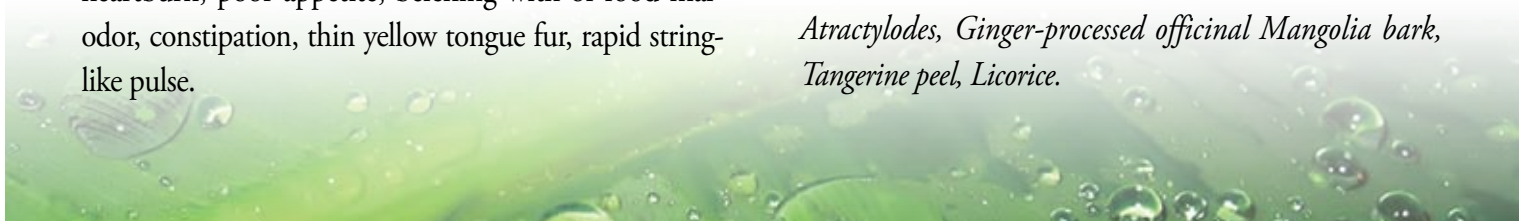
COMBINED TYPES

1. Damp obstruction:

Formula: Ping Wei San Jia Jian

Method: Dry dampness and move the spleen, move Qi and harmonize the stomach

Atractylodes, Ginger-processed official Mangolia bark, Tangerine peel, Licorice.



2. Depressed heat:

Formula: Hua Gan Jian and Zhuo He Wan

Method: Drain the liver and clear heat, harmonize the stomach and free downflow.

White Peony, Unripe tangerine peel, Tangerine peel, Moutan, Gardenia, Coptis, Evodia.

3. Blood stasis:

Formula: Shi Xiao San and Dan Shen Yin Jia Jian

Method: Quicken the blood and transform stasis, rectify *Qi* and harmonize the stomach and relieve pain.

Typha pollen, Squirrel's droppings, Salvia, Sandalwood, Amomum, Rhubarb, Licorice.

4. Food stagnation:

Formula: Bao He Wan Jia Jian

Method: Disperse food and abduct stagnation.

Crataegus, Leaven, Radish seed, Tangerine peel, Pinellia, Poria, Forsythia.

DISCUSSION

There are many causes to dyspepsia disorders. In Chinese medicine, they are grouped into 3 classes: internal, external and neutral causes, in other word, all factors like exterior evils, emotions, imbalanced diet, and over-exhaustion can induce the disease. Management of FGID not only includes treatment described previously, but individual daily habit adjustments is also important, key points including:

1. Adapt to environment and temperature:

Wear suitable clothing according to one's body type and weather condition. This can prevent the evils from inducing illness.

2. Relax emotions, avoid depression and anger:

Human psychological activities can affect meridian and internal organ physiological activities. The spleen governs thought. Too much thought can damage the spleen, which leads to binding of *Qi*. Since the stomach is exteriorly-interiorly related and meridian connected to the spleen, diseases of the spleen will affect the stomach, and cause abdomen fullness and distension. Overexcited and angry emotions affect the liver and can cause rib-side pain and distension. Control one's emotions and relief life pressure is the way to decrease the recurrence of gastrointestinal disorders.

3. Regular and timely eating habits:

The stomach is the sea of water and grains, and governs intake. The stomach harmonizes by downbearing. Everything we eat goes into the stomach. When excess eating or hunger, the free downbearing of stomach would be affected and causes symptoms like stomach fullness or distension, belching, nausea, or vomiting. Patients with FGID should have their meal regularly and timely, and avoid excess eating, drinking and hunger. Light and non greasy food is preferred. Spicy and cold food should be avoided.

The author, Dr. Lin, Tsan-Hon, is the Director of Taiwan Clinical Chinese Medicine Association.

Sun Ten popular formulas related to gastrointestinal care

Item Number	Pin Yin Name	English Name
0915	Xiang Sha Liu Jun Zi Tang	Vladimiriae & Cardamom Combination
0202	Er Chen Tang	Citrus & Pinellia Combination
0407	Liu Jun Zi Tang	Six Major Herb Combination
1122	Shen Ling Bai Zhu San	Ginseng & Atractylodes Formula
0503	Ping Wei San	Magnolia & Ginger Formula
0508	Si Jun Zi Tang	Four Major Herb Combination
0601	An Zhong San	Cardamon & Fennel Formula
0516	Ban Xia Xie Xin Tang	Pinellia Combination
0506	Si Ni San	Bupleurum & Chih Shih Formula
0919	Bao He Wan	Citrus & Crataegus Formula

Sourcing for Safe and High Quality Raw Herb

Using authentic and high quality herbs is critical in producing safe and high quality products. That's why Sun Ten has formed a Raw Herb Sourcing team consist of experts in chemistry, botany, and TCM herbs specialize in herb sourcing and herb identification. Sun Ten collaborates only with reliable herb suppliers that can provide herbs growing locations, and our sourcing team conducts onsite investigation periodically. Following are some examples of raw herbs authenticity, safety, and possible misuse that showed our effort and commitment in providing safe & high quality products.

■ Commonly misused herb: Niu Xi




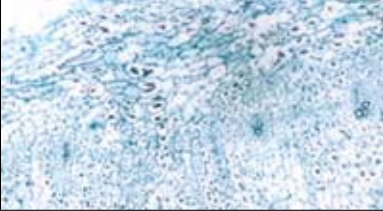
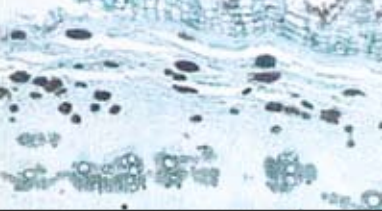
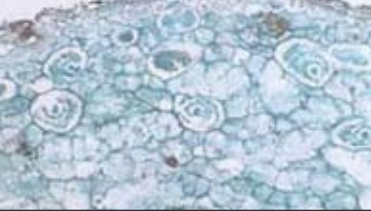

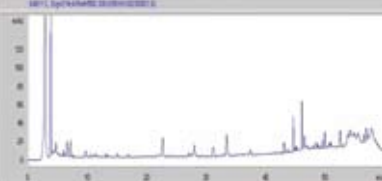

Authentic Niu Xi should be either Huai Niu Xi (dried root of *Achyranthes bidentata* B1) or Chuan Niu Xi (dried root of *Cyathula officinalis* Kuan) depending

on the formulas, whereas Wei Niu Xi (dried root or stem of *Strobilanthes forrestii* Diels) is commonly misused for both Huai Niu Xi and Chuan Niu Xi because Wei Niu Xi is more abundant and cheaper. From the perspective of functional emphasis, Huai Niu Xi is for pain and soreness affecting the lower back and knees due to deficiency, whereas Chuan Niu Xi is for pain due to wind-dampness to invigorate the channels and blood. In Sun Ten, Niu Xi are authenticated and differentiated by macroscopic, microscopic identification, TLC, and HPLC fingerprints to ensure Huai Niu Xi and Chuan Niu Xi are used correctly in the appropriate formulas (Table 1).

■ Herbs that are free of Aristolochic Acid

The Aristolochic Acid controversy of the 1990s

Table 1: Comparison of Different Nui Xi

Pin Yin Name	Huai Niu Xi	Chuan Niu Xi	Wei Niu Xi
Authenticity	Authentic	Authentic	Non-Authentic
Cost	Huai Niu Xi > Chuan Niu Xi > Wei Niu Xi		
Appearance			
Microscopic ID			
Finger print			
Formula	Ji Sheng Shen Qi Wan	Shu Jing Huo Xue Tang	Not Used
	Huan Shao Dan	Du Huo Ji Sheng Tang	
	Yu Nu Jian	Xue Fu Zhu Yu Tang	

highlighted the need for accurate herb identification and Aristolochic Acid analysis. Many Aristolochic Acid related problems could have been avoided if the herbs in question had been identified and analyzed. Sun Ten uses only non-Aristolochiaceae family plant, for example Feng Fang Ji (*Stephania tetrandra* S. Moore) is used instead of Guan Fang Ji (*Aristolochia fangchi* Wu). Mu Tong (*Akebia quinata*) is

used instead of Guan Mu Tong (*Aristolochia manshuriensis*). USFDA published an analytical method by LC-MS for testing of Aristolochic Acid in botanical products. Besides using non-Aristolochiaceae family plant, Sun Ten still conducts Aristolochic Acid testing using the analytical method published by the USFDA to ensure all products containing these herbs are free of aristolochic acid. (Table 2 and 3).

Table 2: Analysis & Comparison of Different Fang Ji



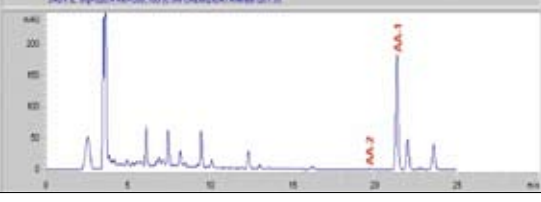



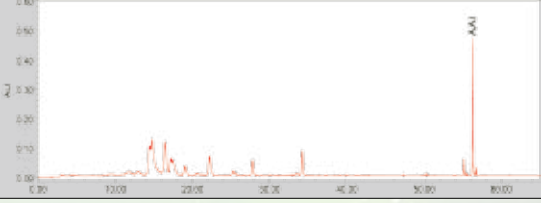
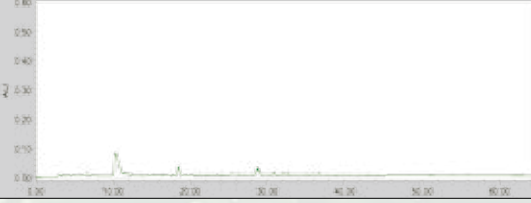
Pin Yin Name	Guan Fang Ji	Fen Fang Ji
Botanical Name	<i>Aristolochia fangchi</i> Wu	<i>Stephania tetrandra</i> S. Moore
Family	Aristolochiaceae	Menispermaceae
Appearance		
Fingerprint		
Aristolochic Acid	Positive	Negative

Table 3: Analysis & Comparison of Different Mu Tong

Pin Yin Name	Guan Mu Tong	Mu Tong
Botanical Name	<i>Aristolochia manshuriensis</i>	<i>Akebia quinata</i>
Family	Aristolochiaceae	Lardizabalaceae
Appearance		
Fingerprint		
Aristolochic Acid	Positive	Negative

■ Herbs contaminated with heavy metals:

Hong Hua

Flos Carthami or Hong Hua, the dried flower of *Carthamus tinctorius* L. (Fam. Compositae), literally means red (Hong) flower (Hua) in Chinese. Because of its name, Hong Hua is commonly misconceived should be completely red in nature, like *Crocus sativus* or Xi Hong Hua. The flower of Flos Carthami is yellow at early stage of blooming (Figure 1) and its color gradually turns to red. Normally at the time of harvest, the color of Flos Carthami should be mixture of yellow and red color (Figure 2). It is a common practice by growers to apply red dye of unknown chemical onto the yellow Flos Carthami to make them completely red, causing the lead (Pb) content of the herb to exceed 100 ppm. Sun Ten requires our collaborated supplier not to apply any red dye and set the lead (Pb) specification at less than 10 ppm according to international specification.



Figure 1: Flower of Flos Carthami at Early Stage of Blooming



Figure 2: Normal Flos Carthami at Harvest

■ Improper fumigation with sulfur dioxide: Gou Qi Zi

The proper drying process of Lycium Fruits (Gou Qi Zi) is by drying, cleaned and processed Gou Qi Zi, naturally under sun. If the drying process is not controlled well enough, the dried Gou Qi Zi may be discolored from oxidation and rotting. In addition, if not stored properly, Gou Qi Zi is easily infected by pest and mold due to its high nutritious content. A common

but improper practice to preserve Gou Qi Zi is to fumigate with sulfur dioxide. Sulfur fumigated Gou Qi Zi is resistant against pest, microbial and mold growth, and appears fresh-reddish color that is extremely appealing at sight. Sulfur residue remained in the



Figure 3: Sun Ten Gou Qi Zi



Figure 4: Sulfur fumigation treated Gou Qi Zi

raw herbs is proven to be harmful. Sun Ten selects Gou Qi Zi berries cultivated and harvested from Ningxia province (Figure 3) and ensures the collaborated supplier not to treat Gou Qi Zi with sulfur fumigation (Figure 4).

■ Herbs likely to be contaminated with aflatoxin: Huang Qi, Yi Yi Ren, Shan Zha, etc...

Improper storage is one of the major factors causing the growth of aflatoxin producing molds and it is a major element that can be controlled by the manufacturer. Upon arrival, raw herbs are placed in a quarantine section in temperature and humidity monitored Sun Ten raw herb warehouse. QC staffs will take samples and analyze to screen for its aflatoxin content before the herbs are released for production. USFDA set an action level for aflatoxins at 20 ppb for all foods, wherein Sun Ten set the aflatoxin specification at below 15 ppb.

The case samples mentioned above are just part of the works that we are doing, there are much more herbs with similar problems. In order to continue providing safe and high quality herbal products, Sun Ten Raw Herbs Sourcing Team is constantly sourcing high quality, authentic raw herbs to meet international standard.

SUN TEN, THE BRAND YOU CAN TRUST

Providing ONLY High Quality Products

**safety
consistency
Efficacy**

**Heavy Metal
Elements**



▲ ICP/MS

For the analysis of trace heavy metal content.

**Aristolochic
Acid**



▲ HPLC

Coupled to different detectors to detect, such as Diode Array (DAD), Fluorescent Detector (FD), and Tandem Mass (LC/MS/MS)

**Pesticide
Residue**



▲ GC/MS

Detects pesticide residue, such as BHT, DDT.

**Microbiological
Analysis**

**Aflatoxin
Contamination**

Batch-to-Batch Consistency

