

CLINICAL RESEARCH

Summary of professor Lu Ming's academic thoughts on the application of Bupleurum prescription in the treatment of hepatic tumors

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Abstract

Objective The incidence rate and mortality of malignant tumors are growing rapidly worldwide. Professor Lu Ming has discovered that in the long-term clinical process, Bupleurum prescription is used in the treatment of head and neck tumors, breast cancer, upper and middle esophageal cancer, liver cancer, bile duct tumor, pancreatic cancer and gynecological tumors. The tumors in these locations are related to the route of the liver meridian and are thus creatively referred to as “hepatic tumors”. This paper summarizes Professor Lu Ming’s treatment experience of Chaihu Decoction based on *Treatise on Febrile Diseases*, which mainly includes Xiaochaihu Decoction, Dachaihu decoction, Chaihu Guizhi Ganjiang Decoction and Chaihu Shugan powder, which are added and subtracted from Xiaochaihu Decoction. Based on the combination of disease differentiation and treatment with syndrome differentiation, certain good clinical effect has been achieved.

Introduction

In accordance with the belief of traditional Chinese medicine (TCM), malignant neoplasm is classified as “abdominal agglomerate” and “abdominal mass”. The invasion of pathogenic factors into the body causes the dysfunction of zang-fu organs and the abnormal operation of Qi and blood as well as Yin and Yang, after which a series of detrimental outcomes occur, including Qi stagnation, blood stasis, damp and condensed phlegm. Subsequently, the stagnated heat and toxicity within the body results in the development of tumor (1). Modern medicine defines tumor as a new organism formed by the cells of local tissues which, at the genetic level, lose the control over the growth under the action of several tumorigenic factors, leading to the abnormal cell proliferation. Based on the cellular characteristics and the degree of damage to the organism, the tumor can be divided into two sub-categories: benign and malignant tumors. According to the statistics released by International Agency for Research on Cancer of World Health Organization (2), there will be 19.29 million new cases of cancer and 9.96 million cancer deaths worldwide in 2020. It is expected that the malignant tumors will become the major cause of mortality in the 21st century. It’s reported that there were 3.929 million new cases of malignant tumors and 2.338 million deaths in China in 2015, with an increasing trend, based on the data from the National Cancer Center of China (NCCC) (3). Malignant tumors have aggravated the pressure on the national medical and health care, and as such, how to prevent and cure malignant tumor in a better way remains to be a difficult problem in the research of medicine (4). At the present stage of tumor development, in addition to western medicine and western medicinal drugs, TCM has great advantages in the comprehensive treatment of tumors (5). The application of TCM for patients with early-stage tumors, for instance, can evidently reduce the risk of recurrence. As for those patients bearing malignant tumors and undergoing the radiotherapy, TCM can effectively diminish the side effects of radiotherapy and chemotherapy. Furthermore, in patients with poorer underlying

medical conditions, TCM can improve the quality of survival and relieve the pain caused by the tumors.

Prof. Lu, one of the first batch of national outstanding clinicians of TCM specialty and a renowned TCM doctor in Xinjiang, is the instructor among the 3rd batch experts of TCM academic experience succession work. For decades, he has devoted himself to the prevention and treatment of common malignant tumors in TCM. During his clinical practice on female patients, he often witnessed the presence of breast, thyroid, and lung nodules, gallbladder polyps, liver cysts, uterine fibroids and ovarian cysts. Considering the strong association with the lack of innate endowment, weakness of drainage and the trouble in getting rid of these bad emotions, the tumors within these sites have been creatively defined as “hepatic tumors” by Professor Lu, which has then become the basis for his further identification and treatment.

Results and Discussion

A discussion on the theory “the diseases are generated by the Qi”

This theory was first put forward in the theory related to the pain based on the *Plain questions*, which has been systematically analyzed and discussed by several medical scholars ever since. “The diseases are generated by the Qi. The Qi rises, relaxes, dissipates or moves down when one is angry, joyous, sad or fearful. The Qi also collects or flows out in case of cold or heat. Additionally, the Qi may be disordered, wasted or lumped together when one is frightened, exhausted or pensive”. These theories suggested that many diseases are caused by the dysfunctional flow of the Qi and that the Qi is the basis, mechanism, and the causes of all diseases, explaining that the malfunction of the Qi can cause all kinds of diseases.

It has been illustrated in *Liuzhou Medical Notes* that the diseases related to the emotions always originates from the liver, which suggests the strong association between the diseases and liver. The loss of circulation and the inability to regulate the flow of Qi lead to the stagnation of Qi, phlegm, and toxin and blood stasis within the liver so as to promote the onset of tumors. A relevant publication has demonstrated that the

incidence of depression in patients with clinically prevalent tumors is approximately 90% (6). According to the belief of TCM, patients with tumors may experience a “loss of harmony” in between Qi and blood and between Yin and Yang, resulting in the abnormality of emotions. These abnormal emotions may aggravate such loss and promote the development of tumors, forming a vicious circle (7). Besides, excessive thoughts and strain on the heart and spleen can lead to Qi stagnation, depression, loss of splenic health, lack of energy, full stomach and abdomen, and insomnia, all of which are the common symptoms of tumors.

The proposal of “hepatic tumors” and the idea of applying Bupleurum prescription

The concept of “liver” in TCM is different from that in western medicine. It’s illustrated in the tenth chapter of *Miraculous Pivot*, which mainly deals with the meridian, that “When it comes to the ceasing ‘Yin Qi’ conduits of the liver, they originate from the borderline between the nail of the big toe and the tuft of hair. They ascend following the instep at the upper edge and pass the inner knuckle in a distance of one inch. Eight inches above the knuckle they may appear behind the major Yin conduit, and they ascend further along the inner edge of the hollow of the knee. They follow the inner side of the thigh and enter the hair. Furthermore, they pass the Yin organ, reach the lower abdomen, extend along the side of the stomach, touch the liver, wrap the gallbladder, ascend through the diaphragm, contact the ribs on the side, follow the back of the throat, ascend further and enter the upper denture. Furthermore, they link with the eye connection, appear above at the forehead with the supervisor conduit. Originating from the eye connection, their branches descend into the cheek and wind around the lips. Further branches originates from the liver again, separately penetrating the diaphragm and having further ascended pour into the lung. The excited vessels result in the patients’ suffering from the pain the lower back, making patients unable to bend and stretch. Males may suffer from prominence-illness and elevation-illness, while the

lower abdomen swells in females. In some serious cases, the throat may dry up, with the ash grey face and the loss of complexion. These are the diseases generated by the liver. Feeling of fullness in the chest. Vomiting with the movement of the Qi against the norms. Outflow of undigested food. Onset of indirect inguinal hernia. Uncontrolled loss of urine. Closure of the urinary path with the protuberance-related illness”. Based on the pathway within the liver and the physiological and pathological functions of the liver, prof. Lu creatively proposed the concept of “hepatic tumors”, including head and neck tumors, breast tumors, hepatobiliary tumors and gynecological tumors.

In his long-term clinical practice, prof. Lu has concluded that patients may be subjected to various degrees of surgery, chemotherapy, and radiotherapy during the treatment of malignant tumors, which will gradually bring damage to their vital energy, those of the spleen and stomach in particular. If the spleen and stomach are out of harmony, the stomach loses its circulation and the spleen loses its health, which causes the lack of biochemical sources in the Qi and blood and the incapability of resistance against external pathogens. All these phenomena, along with the emotional and mental disorders, will lead to the stagnation of Qi in the liver and the feeling of fullness in the chest. ‘The abnormally overexpressed feelings of anger, joy, sadness, misgiving, and fear may affect the zang-fu organs and thus be detrimental to health’. The loss of Yin fluid due to the detrimental outcome caused by the depression may result in bitterness in the mouth and dryness in the throat. Besides, the spleen may lose its health after the disease is spread from the liver, and the symptoms of abdominal fullness, dyspepsia and appetite loss may be aggravated and are repeatedly causal, forming a vicious cycle. Through the method of “harmony”, bupleurum prescription can regulate the flow of the Qi so that the Qi in the liver can be harmonized and the functions of the spleen and stomach can be restored, therefore alleviating the pain of patients bearing tumors. As the ideological embodiment of traditional Chinese culture, the method of “harmony” has been

inherited with various meanings. However, it always conveys the idea of “harmonizing those out of place” so that the disharmonized Qi and blood as well as Yin and Yang can be unified (8). On the basis of the above theory, according to the different pathologies of hepatic tumors, prof. Lu has applied the bupleurum prescription (also called “Chai Hu formula”) in a rational manner, including Da Chaihu Tang (major bupleurum decoction), Xiao Chaihu Tang (minor bupleurum decoction) and the modification of minor bupleurum decoction, including Chaihu Guizhi Tang, Chaihu Guizhi Ganjiang Tang, Chaihu Jia Longgu Muli Tang, Chaihu Jia Mangxiao Tang, and Si Ni San, etc., all of which has achieved satisfying clinical results via the combination of the diagnosis and treatment of the disease.

The application of minor bupleurum decoction on the treatment of head and neck tumors

In his long-term clinical practice, prof. Lu has employed minor bupleurum decoction to treat head and neck tumors, including nasopharyngeal cancer, larynx cancer, vocal cord cancer, thyroid cancer, and the esophagus carcinoma at the upper and middle parts. Based on the description in the tenth chapter of *Miraculous Pivot*, “When it comes to the ceasing ‘Yin Qi’ conduits of the liver..., (they) ascend through the diaphragm, contact the ribs on the side, follow the back of the throat, ascend further and enter the upper denture. Furthermore, they link with the eye connection, appear above at the forehead with the supervisor conduit. Originating from the eye connection, their branches descend into the cheek and wind around the lips”. Through the circulation, these tumors may correspond to the liver meridian of foot-jueyin.

According to prof. Lu, the main pathogenesis of head and neck tumors is liver depression and Qi stagnation as well as the immoderate joy and rage. The abnormal drainage function of the liver will result in Qi stagnation and poor circulation of blood, which will then lead to phlegm stagnation and blood stasis over time. Finally, the dysfunctional Qi in the liver prompts the upward flow of phlegm and blood stasis, which

will become the tumor in the head and neck in the end following the clinch to each other.

As a representative of the bupleurum decoction, minor bupleurum decoction is one of the main formulae of the “six meridians” and symbolizes as one of the methods of harmonization in the “eight methods”. The key of its application is to regulate the Sanjiao and to reconcile and the superficies and interior. According to the proposal of prof. Lu, in the prescription of minor bupleurum decoction, *Radix Bupleuri* and *Radix Scutellariae* are the principal drugs that can enter the liver meridian to achieve the effects of stimulating Qi in the liver and clearing the pathogens. *Rhizoma Pinelliae* may resolve the phlegm “to lower the turbid”. *Radix Ginseng*, *Fructus Jujube*, and *Rhizoma Zingiberis Recens* benefit the Qi and nourish the spleen. The combination of *Radix Paeoniae Alba* and *Radix Glycyrrhizae* can nourish the Yin in liver. Altogether, these medications promote the operation of Qi, the balance of Yin and Yang, which has achieved certain effects in the treatment of head and neck tumors.

The formation, progression and prognosis of tumors are strongly associated with the degree of immunity (9). Patients with tumors often present a lower immune function, which is prone to be further declined in the process of anti-tumor therapy (10). Minor bupleurum decoction has achieved a variety of regulatory effects on the immune function of human beings (11). It has been evidenced that minor bupleurum decoction can enhance the function of immune system by promoting the proliferation of B lymphocytes, improving the phagocytosis of macrophages and enhancing specific humoral immunity (12). Meanwhile, the demonstration from Du *et al.* has suggested that the combination of bupleurum decoction with *Scutellaria baicalensis* exert a satisfying anti-tumor effect as a drug for harmonizing Shaoyang, with some components improving the immune function for patients with tumors, thus indirectly achieving the tumor-suppressive effect (13, 14).

The application of Chai Hu Zhu Gan San on the

treatment of breast tumors

Breast cancer is a malignant tumor with a higher incidence in women. According to the data released by the International Agency for Research on Cancer (2), breast cancer ranked first in the incidence of female malignant tumor in 2020. In 2020, there were about 2.261 million new cases and about 685,000 deaths of breast cancer worldwide, which makes breast cancer rank fourth in the death rate of female malignant tumor. In the data issued by the NCCC, about 304,000 new cases of female breast cancer in the registration areas and about 70,000 deaths were reported, making breast cancer the first and fifth in the incidence and death of female malignant tumors (3). Thankfully, due to the continuous improvement of comprehensive therapy, the survival rate of patients has been significantly improved, with the average survival time over 5 years (15). Also termed as “mammary tumor” in TCM, breast cancer is characterized by the lumps in the breast, with the hard and uneven texture, the haunting ulcerated lumps, the foul odor of both pus and blood, and the increasing pain, which is prevalent in women of 40-60 years old. Prof. Lu believes that the liver is the blood-enriching organ and the breast is the place where hepatic meridians circulate and that the occurrence of breast cancer is related to the stagnation of Qi in the liver, the deficiency of splenic Qi, and the insufficiency of renal essence, resulting the coagulation of phlegm and blood stasis. The accumulation of these pathogenic factors in the meridians around the breast leads to the onset of mammary tumors.

Relevant clinical investigations have suggested that in accordance with the evaluation on the status of mental health in 108 patients with breast cancer, varying degrees of depression and anxiety may present in these patients (16). Another study has illustrated that the incidence of anxiety and depression in patients with breast cancer is 78% and 89%, respectively, which is evidently higher than that of the normal people (17). These discoveries have highlighted the feasibility of dredging liver, relieving depression and promoting blood circulation in the treatment of breast cancer. What's important lies in the fact that Chai Hu

Zhu Gan San has been widely applied in the clinical practice in the treatment of breast cancer and related diseases.

Chai Hu Zhu Gan San is a variant of Si Ni San in *Shang Han Lun* and originates from the medical treatise in the work covering the diagnostic and therapeutic standards of diseases (18). Prof. Lu believes that this prescription is the Si Ni San additionally blended with *Rhizoma Ligustici Wallichii* and *Rhizoma Cyperi*, which harmonizes the blood, reorganizes the flow of Qi, and dredges the liver. *Radix Bupleuri*, *Fructus Aurantii* and *Rhizoma Cyperi* are the medicinal parts exerting the principal effects to reorganize the flow of Qi, while *Radix Paeoniae Alba* and *Rhizoma Ligustici Wallichii* are the adjuvant to harmonize the blood, with the supplementation of *Radix Glycyrrhizae* as appropriate. This prescription has been demonstrated to dredge the liver, promote the flow of Qi, accelerate the blood flow and relieve the pain. Based on the specific symptoms of patients, these following medicinal parts may be supplemented or not. For patients with the more serious lump, *Bolbostematis Rhizoma*, *Bombyx Batryticatus*, *Trichosanthis Fructus*, *Concha Ostreae* and *Fructus Liquidamberis* may be added. If the patients are agitated and have symptoms like insomnia and dreaminess, *Semen Platycladi*, *Radix Curcumae*, Sheng Long Mu (a combination of *Fossilia Ossis Mastodi* and *Concha Ostreae*), *Caulis Polygoni Multiflori*, *Cortex Cinnamomi*, *Cortex Albizziae*, and *Concha Margaritaeferae Usta* were supplemented. If the breasts may be swollen and patients feel painful, *Fructus Citri Sarcodactylis*, *Fructus Citri*, *Fructus Toosendan* and *Corydalis Tuber* were recommended. Additionally, for patients with a depressed liver, *Radix Scutellariae*, *Fructus Hordei Germinatus*, *Spica Prunellae* and *Herba Taraxaci* were introduced. In addition, based on the modern pharmacology, the following medicinal parts with definite anti-tumor effects may be additionally added, including *Herba Hedyotis Diffusae*, *Herba Scutellariae Barbatae*, *Lobelia chinensis Lour* and *Semen Coicis*. Meanwhile, the patients are given some relevant lesson about their physical health, and are instructed to self-regulate

their emotions to avoid impatience, nervousness, depression and other negative emotion, with a regular review as appropriate.

The application of Chaihu Guizhi Ganjiang Tang on the treatment of liver tumors

In TCM, hepatocellular carcinoma belongs to the categories of “gynecologic abdominal lumps”, “abdomen agglomeration”, “tympanites”, “blocked liver meridians”, “jaundice”, “asthenic disease”, and “hypochondriac pain”. In modern research of medicine, primary liver cancer includes hepatocellular carcinoma, intrahepatic cholangiocarcinoma and the combination of these two. Liver cancer is one of the main causes of mortality in the malignant tumors, accounting for 8.2% of the total number of deaths and ranking 2nd, along with an increasing trend with age (19-21). Prof. Lu believes that the pathogenesis of liver cancer is complicated with cold and heat, with varied syndromes included and co-existed, which is related to emotional disorders, poor Qi floor, and dredging malfunctions in the liver and gallbladder. In most patients with liver cancer, their liver and spleen may be damaged following the interventional surgery and chemotherapy. “During the diagnosis of liver disease, it should be taken into account that it may spread to the spleen, and accordingly, the treatment of spleen should be prioritized”. As such, the treatment of liver cancer should be focused on the co-treatment of the liver and spleen (stomach). Patients with liver cancer may present the following symptoms: the bitter taste in the mouth, dry throat, discomfort in chest and feeling hot in the upper extremity, together with some others that are indicative of splenic insufficiency: fatigue, abdominal distension, loose stool and dyspepsia. Through a throughout examination on Shaoyang organs, some complicated symptoms like heat and Taiyin cold-dampness have been further evidenced, the corresponding treatment of which should be focused on clearing the heat in gallbladder and warming the spleen.

Chaihu Guizhi Ganjiang Tang was first seen in the work of *Shang Han Lun*, with the following statement: “when cold damage has already lasted for five or six

days, together with the promoted sweating, applied precipitation, fullness in the chest, rib-side and mild bind, inhibited urination, thirst without retching, sweating from the head only, aversion to cold and heat, and heart vexation, it means that the disease hasn't been resolved yet. Therefore, Chaihu Guizhi Ganjiang Tang should govern”. As a variation of minor bupleurum decoction, Chaihu Guizhi Ganjiang Tang innovatively combines the minor bupleurum decoction with Li Zhong decoction. As for the efficacy of each constituting part, prof. Lu believes that *Radix Bupleuri* and *Radix Scutellariae* can clear the liver and benefit the gallbladder, removing the pathogenic factors of half exterior and half interior. *Rhizoma Zingiberis* and *Radix Glycyrrhizae Preparata*, which taste spicy and sweet, warms the spleen and tonifies the Yang. *Ramulus Cinnamomi* may coordinate and harmonize the Yin and Yang. *Concha Ostreae* may clear the heat in the gallbladder and relieves the depression of Yang Qi, and its combined use with *Radix Bupleuri* may modulate the upward and downward flow as well as the dispersal and gathering of Qi in a regular manner, which dredges and benefits San Jiao. *Radix Trichosanthis* nourishes Yin and stops thirst. *Radix Glycyrrhizae Preparata* harmonizes these parts to calm the liver and alleviate anxiety. The entire formula can benefit the splenic Yang and clear the heat in Shaoyang organs, since the abnormal splenic Yang and the heat in Shaoyang organs may be consistent with the pathogenic characteristics of liver cancer in TCM.

Therefore, in his clinical practice of treating liver cancer, prof. Lu may add or subtract this formula for the treatment of middle or late stage of liver cancer, for the postoperative maintenance treatment, anti-metastasis therapy and the prevention from recurrence and for the treatment of side effects following the targeted therapy. Since liver cancer is a tangible and solid malignancy, products with softening and dispersing effects like *Colla Carapacis* and *Carapax Trionycis* are often used in clinical practice. If the spleen is deficient and generates the dampness, some drugs to strengthen the spleen and dispel the dampness may be used, like *Rhizoma*

Atractylodis and *Semen Coicis*. Furthermore, prof. Lu has emphasized that the etiology and pathogenesis of the disease must be mastered accurately, followed by the combination of relevant TCM theories on the diagnosis and treatment, so that some satisfactory results may be achieved in clinical practice.

The application of major bupleurum decoction plus/minus Yinchenhao decoction on the treatment of cholangiocarcinoma and pancreatic carcinoma

In recent years, with the development of economy, improvement of living standards, and great changes in the people's dietary habits and lifestyle, the incidence of biliary and pancreatic tumors in China has been increasing year by year. Cholangiocarcinoma is a kind of tumor with a high degree of malignancy, of which hilar cholangiocarcinoma takes up over 60%, together with an evidently elevated incidence and mortality rate (22). Gallbladder is one of the extraordinary fu-organs, and the bile is generated by the essence of the liver. Liver and gallbladder are the organs of both external and internal, and the drainage function of the liver controls and regulates the activation and excretion of bile. The tumors in both pancreas and bile duct can be treated from Shaoyang. The lesions in pancreas may also take place when there're lesions in the liver and bile, together with the abdominal pain and distension, fever, nausea, vomiting, stool obstruction and other major clinical manifestations, which are similar to the TCM terms like "hypochondriac pain", "jaundice", "diaphragmatic pain", and "abdominal pain". In clinical diagnosis and treatment, most patients are in advanced stage and lose the opportunity of surgery, with little effects in chemotherapy and radiotherapy. Here, prof. Lu believes that the etiology is related to the excessive uptake of fat and sweet diet, the intemperate dietary habits, and the emotional disorders and the pathology is mainly associated with the stagnation of liver and Qi, the blockage of damp-heat (which originates from liver, bile and pancreas) in the Zhong Jiao and Qi in "fu" organs, which leads to the loss of drainage function in the liver and the abnormal transduction of spleen and stomach. For patients with abdominal

distension and pain, major bupleurum decoction was preferred, while Yinchenhao decoction is optional for the blockage of damp-heat in the liver, bile, and pancreas. The combination of these two can exert a direct therapeutic effect on both cholangiocarcinoma and pancreatic cancer.

According to the part of *Jin Gui Yao Lue* which mainly deals with the diseases of abdominal fullness, acute abdominal pain and accumulation of food, it has been documented that "patients may suffer from the diseases when there's a feeling of pain in response to the pressure on the point below the heart, for which major bupleurum decoction is recommended". *Radix Bupleuri* in this formula can promote the generation of Qi for Shaoyang and is the principal drug to benefit Shaoyang, which can also be used to treat on jueyin meridian. For those with restrained hepatic Qi, *Radix Bupleuri* may lead to the smoothed flow. Additionally, *Radix Bupleuri* may disperse the heat in the bile and pivot the external sensation of Shaoyang to pass through the diaphragm and ascend (23). As a formula belonging to the "bupleurum class", major bupleurum decoction is based on minor bupleurum decoction with the exclusion of *Radix Ginseng* and *Radix Glycyrrhizae* yet the supplementation of *Radix et Rhizoma Rhei*, *Fructus Aurantii Immaturus* and *Radix Paeoniae Alba*, which is also the addition or subtraction of minor bupleurum decoction and Xiao Cheng Qi Tang, taking the meaning of reconciliation and dredging and being applied to the treatment for Shaoyang disharmony and Yangming fu-viscera excess. *Radix Scutellariae*, being another principal drug, is bitter in taste and cold in nature, which can clear the heat in liver, gallbladder and large intestine and dispel the heat due to Shaoyang disharmony and Yangming fu-viscera excess. *Radix et Rhizoma Rhei* and *Fructus Aurantii Immaturus* disperse the clot, clean the stagnation of dirty substances, and eliminate the fullness in stomach, which are used as the minister drugs. *Radix Paeoniae Alba* and *Fructus Jujube* nourish Yin and liver and regulate the dredging function and flow of hepatic Qi. *Rhizoma Pinelliae* harmonizes the stomach and stops the vomiting. *Fructus Jujube* and *Rhizoma Zingiberis Recens* can

coordinate together to regulate the spleen and stomach. The combination of these medicinal parts may exert the following effects: dredging the liver, smoothing the spleen and removing the clots.

Yinchenhao decoction is composed of *Herba Artemisiae Scopariae*, *Fructus Gardeniae* and *Radix et Rhizoma Rhei*. According to the description of *Jin Gui Yao Lue*, “patients with jaundice can’t take both cold and hot food. Following the intake of the food, they may feel dazzled and their organs may be tense and turn yellow. Such phenomenon is termed as jaundice, for which Yinchenhao decoction should be used as the principal drug. Prof. Lu believes that patients with cholangiocarcinoma and pancreatic cancer are mostly suffering from the internal dampness and heat. These three herbs in the formula are those tasting bitter and being cold in nature, since “cold may neutralize the heat, and bitter may remove the dampness”. *Herba Artemisiae Scopariae* and *Radix et Rhizoma Rhei* are those herbs to reduce the yellowing, of which *Herba Artemisiae Scopariae* dredging the liver and gallbladder, clears heat and removes the dampness to reduce yellowing, while *Radix et Rhizoma Rhei* removes the stagnant heat and damp-heat congestion. Furthermore, *Fructus Gardeniae* clears the depression and heat in Sanjiao. As such, Yinchenhao decoction is suitable for patients with cholangiocarcinoma and pancreatic carcinoma due to the toxicity caused by the dampness and heat.

The application of minor bupleurum decoction plus/minus Guizhi Fulin pills on gynecological tumors

Common gynecological tumors include cervical cancer, endometrial cancer and ovarian cancer, of which cervical cancer is the most common malignancy and its onset of age is generally between 25 and 64 years. Endometrial cancer, also known as uterine body cancer, has a median onset age of 61 years, with most cases occurring in between 50 and 59 years. The incidence of ovarian cancer is second only to cervical cancer and endometrial cancer, with various types and difficult early diagnosis. The overall five-year survival rate of ovarian cancer is 30-40%,

and the mortality rate ranks first among the gynecological tumors. Prof. Lu believes that gynecological tumors are the diseases of intermingled deficiency and excess, which are sometimes associated with the emotions. The pathogenesis is liver depression and Qi stagnation, the latter of which leads to the poor flow of body fluid and blood. In addition, many patients with gynecological tumors have a history of abortion, leading to blood stasis and phlegm in the uterus and further occurrence of tumors. As such, minor bupleurum decoction and Guizhi Fuling pills are often used in clinical treatment of gynecological tumors.

Prof. Lu believes that in the prescription of minor bupleurum decoction, *Radix Bupleuri* and *Rhizoma Zingiberis Recens* can elevate the clear yang, while *Radix Scutellariae* and *Rhizoma Pinelliae* may reduce those turbid. Since liver is the organ that governs the flow of blood, the regulation of Qi and blood in the liver meridian may be used to treat the diseases with “heat invading the blood chamber” and the gynecological tumors. Guizhi Fulin pills originates from the part of “treatment for women’s gynecological tumors” in Zhang Zhongjing’s work *Jin Gui Yao Lue*, which suggests that “when the menstruation has paused in women with the relevant diseases for less than 3 months, those patients may suffer from the leak of blood and feel the fetal-like movement on the umbilicus. However, this movement not indicates pregnancy but suggests the symptoms of chronic harm, and Guizhi Fuling pills should be the principal drugs”. As a classic formula for the treatment of women with persistent obstruction, retentions of symptoms in the uterus, and chronic obstruction, Guizhi Fuling pill is also commonly used in the treatment of gynecological tumors in modern medicinal research, with *Ramulus Cinnamomi*, *Sclerotum Poriae Cocos*, *Radix Paeoniae Alba*, *Cortex Moutan* and *Semen Persicae* as the constituting part (24). In accordance with some relevant research, Guizhi Fuling pill is rich in terpenoids, glycosides, tannins, volatile oils and other components, with some evident anti-tumor, anti-coagulant, and anti-inflammatory effects, etc.,

which is used to treat ovarian cysts, breast cancer, uterine fibroids, dysmenorrhea, and other gynecological diseases (25, 26). As the principal drug, *Ramulus Cinnamomi* warms Yang and dredges the meridians so as to promote the blood flow and disperses the clot. *Radix Paeoniae Alba* is the minister drug which nourishes Yin. Further, *Sclerotum Poriae Cocos*, which strengthens the spleen and benefits the Qi, can be combined with *Ramulus Cinnamomi* to warm the Yang and disperse the clot. The entire prescription, with the limited use of medicinal plants, exerts powerful effects to strengthening the spleen, warming the Yang, dispelling stasis, eliminating stagnation and resolving symptoms. In his clinical practice, prof. Lu further applies *Hirudo* and *Steleophaga* to exert the effects on activating blood circulation resolving the stasis, and preventing the tumors in patients with severe blood stasis. For those with Yang deficiency and cold condensation, *Folium Artemisiae Argyi* and *Fructus Foeniculi* may be used. For those with weak corporeity and spontaneous sweating, *Radix Astragali*, *Rhizoma Atractylodis Macrocephalae*, *Radix Saposhnikoviae*, and *Fructus Tritici Levis* may be further applied. Additionally, in patients with severe heat and toxicity, *Radix et Rhizoma Rhei*, *Herba Scutellariae Barbatae*, *Herba Lobeliae Chinensis* and *Herba Hedyotis Diffusae*, can be applied, with the effects of heat-clearing, detoxification and tumor-suppression.

Conclusion

Based on his long-term clinical experience and the TCM doctrine of meridian circulation, prof. Lu has creatively proposed the concept of “treating hepatic tumors with the application of bupleurum decoction”. In the treatment of tumors in clinical practice, the physicians should both be familiar with the indications of each formula and have a good understanding of TCM-related theory, method and prescription. Only then can they reasonably choose the prescriptions of bupleurum decoction. It should be noted that the clinical application of bupleurum decoction in the treatment of hepatic tumors is just exploratory, along with a preliminary discussion.

Whether there're similar patterns for cardiac, pulmonary, splenic and renal tumors needs to be further discovered and discussed, and the results of our current research await for the criticism and correction of fellow faculties.

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The authors declare no conflict-of-interest.

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