

4. APPLICATIONS AND PRESCRIPTIONS OF PERILLA IN TRADITIONAL CHINESE MEDICINE

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INTRODUCTION

Since the advent of "Shen Nong Ben Cao Jing" (Shen Nong's Herbal), the progenitor of herbals in traditional Chinese medicine, completed around 25 A.D., which classified herbal drugs into upper grade, mid-grade and lower grade, all subsequent herbals classified Chinese herbal drugs according to this tradition. The upper grade drugs are known as the imperial drugs which are non-poisonous and are used mainly for nurturing our lives; the mid-grade drugs are known as the ministerial drugs which are either non-poisonous or poisonous and are used chiefly to nurture our temperament; and the lower grade drugs are known as the assistant or servant drugs which are used for treating disease and are mostly poisonous.

In clinical diagnosis, a physician of traditional Chinese medicine will first consider the circulation of *qi*, blood and water. The so-called blood conformation in traditional Chinese medicine (a conformation in traditional Chinese medicine can be approximated to a symptom complex or syndrome in Western medicine) refers to "blood stasis" which is a poor blood circulation condition resulted from congestion or stagnation of blood in the body and may lead to formation of disease. A water conformation is also referred to as "water-stagnancy conformation" which designates poor water metabolism whereof unbalanced circulation and distribution of water may cause disease. Whereas, *qi* is also an essential element of life and is often the element pertinent to living, senescence, disease and death. *Qi* is invisible but mobile, and the pathological state resulted from *qi* impediment or stagnation is known as "*qi* impediment conformation", and a free circulation of *qi* is essential for maintenance of good health.

PERILLA AS RECORDED IN ANCIENT CHINESE MEDICAL CLASSICS

Perilla is recorded in "Ming Yi Bie Lu" (Renown Physicians' Extra Records), a Chinese medical classic completed around 500 A.D., wherein the herb is listed as a mid-grade drug under the name "su". The herb has also been recorded in many other medical works under different names such as "zi su" in "Shi Liao Ben Cao" (Bromatotherapy Herbs), or "chi su" in "Zhou Hou Fang" (Prescriptions Ready at Hand's Reach). Li Shi-zhen (1518–1593 A.D., Ming dynasty) noted in his great work "Ben Cao Gang Mu" (Categorized and Itemized Herbal):

The character "su" means comforting, which implies that the herb comforts our bodies and promotes the circulation of blood and *qi*. Tao Hong-jing (462–536 A.D.,

Liang dynasty) stated, "The herb *su* is purple coloured on the undersides of its leaves and possesses a very aromatic flavour. The other species that are not purple coloured and do not have an aroma, which resemble *ren* [*Perilla frutescens* (L.) Britton var. *japonica* (Hassk.) Hara] are known as wild *Perilla* and have no use as medicine". The "Ming Yi Bie Lu" records this herb, saying, "Perilla is used chiefly to descend *qi*, and remove cold from the central torso of the body; the seed of the herb is especially good for these effects". However, Su Song said, "The "su" species that are purple coloured on the backsides of leaves are better, which are gathered in the summer for the leaves and stems and in the autumn for the seeds, there being several varieties of the herb".

From the above statements we can see that in ancient times, it was the seed of *Perilla* that was commonly used, and in the Song dynasty (960–1279 A.D.), the stem, leaf and seed of the herb seemed to have been used equally commonly. Nowadays, on the herb market we have supply of this herb in two forms: one is the leaves admixed with stems and the other is simply the seed.

As recorded in the "Ben Cao Gang Mu", the stem and leaf of *Perilla* are described as having a pungent taste, a warming nature and no toxicity, and are said to be chiefly indicated for relaxing muscles, perspiring skin, dispersing winds and cl-dlls, moving *qi*, relieving stomach, resolving phlegm, venting the lungs, harmonising blood, warming stomach, stopping pain, arresting asthma, stabilising embryo, detoxifying poisoning from eating fish and crab and treating snake and dog bites. *Perilla* seed is said to have similar effects. As for the differences of uses between *Perilla* leaf and seed, Li Shi-zhen said that both the *Perilla* leaf and seed were of similar effects, but the leaf was good for dispersing winds and the seed was good for clearing and dredging the upper and lower torsos.

PERILLA AS USED IN CHINESE HERBAL MEDICINE

Among modern literature, it is generally believed that the drug items "Perilla leaf", "Perilla stalk" and "Perilla seed" as used in traditional Chinese medicine are the dried leaves, dried stems, and dried mature seeds of the plant *Perilla frutescens* (L.) Britton var. *crispa* (Thunb.) Decne. of the Labiatae family and plants of related genera (Hsu *et al.*, 1986; Namba, 1980). The Chinese Pharmacopoeia (1990) also includes the dried mature fruits, dried leaves and dried stems of *Perilla frutescens* (L.) Britt. for the articles of Fructus *Perillae*, Folium *Perillae*, and Caulis *Perillae*. The Japanese Pharmacopoeia (1991), on the other hand, lists Herba *Perillae* as being derived from the leaves and twig ends of *Perilla frutescens* Britton var. *acuta* Kudo and related plants.

According to Chinese medical literature, *Perilla* possesses a pungent flavour and a warming property, and enters its effects into the lung and the spleen meridians. The *Perilla* leaf has been described as having the effects of diaphoresis, antipyresis, moving *qi*, relieving central torso (adjusting gastrointestinal functions and aiding digestion), antidoting poisoning from eating fish and crab. Hence it is suitable for treating common cold by rendering diaphoresis to resolve fever, allaying cough and asthma, effecting tranquility, relieving epigastric and abdominal distension, and strengthening the stomach. It is usually used together with other herbs for these effects. Besides, *Perilla* is also effective against poisoning from eating fish and crab. Whereas, *Perilla* stalk is effective

in soothing qi and stabilising the embryo, and is thus capable of treating *qi* adversity, abdomen ache, and embryonic aching and instability.

Perilla seed possesses the effects of descending *qi*, arresting asthma, stopping cough, dissipating phlegm, relieving the chest and resolving depression, wherefore it is indicated for adverse cough, phlegm-associated asthma, qi impediment, and constipation. In other words, Perilla leaf is good at dispersing the ailing evils, and Perilla stem is better in regulating *qi*, while Perilla seed is suitable for descending phlegm. Hence, Perilla leaf is mostly used in common cold with chills and fever; Perilla stalk is mostly used in pectoral distress and vomiting and in calming the embryo; and Perilla seed is frequently prescribed for asthmatic cough and for treating phlegm problem (I-su *et al.*, 1986; Namba, 1980; Takagi *et al.*, 1982).

CLINICAL APPLICATIONS OF PERILLA

Clinically, Perilla is often used in combination with other herbs in treating external contractions of wind and cold evils manifesting chest depression together with nausea, vomiting and other symptoms of the gastrointestinal type of cold. The diaphoretic effect of Perilla leaf is weaker than that of ephedra and cinnamon. Thus, when used alone, it usually does not produce noticeable effect, and therefore has to be used in combination with other herbs such as schizonepeta, siler, fresh ginger, etc. in order to help promote its diaphoretic effect. Nevertheless, Perilla leaf is characterised by its effects in regulating *qi*, relieving the central torso, and stopping vomiting (this effect will be promoted by combination with “zhi-qiao” i.e. Fructus Aurantii). Cases manifesting frequent nausea and vomiting or diarrhoea may take a decoction from boiling 5 g of Perilla leaf and 3 g of coptis. Mild cold in the senile individuals or young children in whom the use of ephedra and cinnamon may cause excessive diaphoresis may be treated with Perilla leaf instead. A Chinese herbal formula named Cyperus and Penlla Formula (to be elaborated later) is one of the formulas containing Penlla as one of their component herbs.

Perilla is also good for the vomiting, pectoral distress, nausea, and lower abdominal pain experienced during pregnancy. Because Perilla stalk possesses stomachic effect, it can present antiemetic effect against pregnancy nausea and vomit, can soothe *qi* and pacify the fetus. For such purposes 4–9 g of Perilla stalk together with citrus rind and cardamon is often used to augment the stomachic effect.

Also, poisoning from eating fish and shell fish, with the symptoms of vomiting, diarrhoea and abdomen ache can be treated by taking 30–60 g of Perilla leaf decocted alone or together with fresh ginger.

Besides, Perilla can also be applied externally for treating scrotal eczema wherefore 30 g of Perilla leaf is boiled in water, and after getting cool the decoction is used to wash the lesion and then wipe the lesion with peanut oil (Chungshan Medical College, 1979).

Clinical application of Perilla seed mainly makes use of its *qi* descending and antiasthmatic effects. The herb is thus usually indicated for dyspnea, pectoral distress, wheezy stridor which in severe condition may necessitate a sitting up respiration or is accompanied by respiratory tract disturbance symptoms such as cough as seen in chronic bronchitis, pulmonary emphysema, etc. Excessive phlegm may hinder the respiratory tract passage and cause cough, dyspnea, and so forth. In traditional Chinese medicine, it

is believed that eliminating phlegm may eliminate cough, dyspnea and pectoral distress which are symptoms due to pulmonary *qi* adversity, and this effect is known as descending *qi* (downing *qi*). Clinical experiences show that despite the above mentioned effects of Perilla seed, it is still necessary to incorporate Perilla seed with antitussive and expectorant herbs such as peucedanum, pinellia, etc. and *qi* regulating herbs such as magnolia bark, citrus rind, etc. in order to bring about the expected result. A Chinese herbal formula named Perilla Fruit Combination (to be elaborated later) is one of the formulas containing Perilla seed as one of the component herbs. In using the Perilla seed-containing formulas, it should be noted that because Perilla seed possesses an intestine lubricating (bowel moving) effect, it is contraindicated in patients with muddy stool or diarrhoea symptom. It can only be used in conditions showing cough with constipation (Chungshan Medical College 1979).

COMMONLY USED CHINESE HERB FORMULAS THAT CONTAIN PERILLA

As mentioned above, Perilla is often used together with other Chinese herbs in many herb formulas, especially in the *qi* formulas used for treating neurotic disorders, and respiratory diseases. In addition, it is also commonly used as a diaphoretic for common cold. Some commonly used Chinese herb formulas that contain Perilla leaf are shown

Table 1 Commonly used traditional Chinese herb formulas that contain Perilla leaf

<i>Formula</i>	<i>Source</i>	<i>Number of Herbs</i>	<i>Content (%) of Perilla Leaf</i>
Pinellia and Magnolia Combination	Jin-gui-yao-lue	5	10.0
Ephedra and Magnolia Combination	Wai-tai-mi-yao	7	7.5
Cyperus and Perilla Formula	Tai-ping-hui-min-he-ji-ju-fang	5	15.0
Ginseng and Perilla Combination	Tai-ping-hui-min-he-ji-ju-fang	13	4.4
Dang-guei Sixteen Herbs Combination	Wan-bing-hui-chun	16	5.3
Aquilaria and Perilla Formula	Tai-ping-hui-min-he-ji-ju-fang	11	9.8
Citrus and Perilla Combination	Tai-ping-hui-min-he-ji-ju-fang	15	7.7
Lindera and Cyperus Formula	Yi-xue-ru-men	6	10.7
Cyperus, Perilla and Citrus Formula	Wan-bing-hui-chun	10	9.8
Ephedra and Cimicifuga Combination	Tai-ping-hui-min-he-ji-ju-fang	12	10.2
Apricot Seed and Perilla Formula	Wen-bing-tiao-bian	11	7.6
Areca Seed and Chaenomeles Formula	Shi-fang-ge-kuo	7	5.9
Hoelen, Atractylodes and Areca Combination	Zheng-zhi-zhun-sheng	13	3.6
Agastache Formula	Tai-ping-hui-min-he-ji-ju-fang	13	4.5

Table 2 Chinese herb formulas that contain Perilla leaf as recorded in the pharmacopoeia of PRC

<i>Formula</i>	<i>Number of Herbs</i>	<i>Content (%) of Perilla Leaf</i>
Xiao'er Zhibao Pills	25	3.6
Xiangsu Zhengwei Pills	15	22.5
Wushicha Granules	19	2.9
Jiusheng Powder	9	13.0
Ganmao Qingre Granules	11	5.1
Huoxiang Zhengqi Pills	11	5.3
Liuhe Dingzhong Pills	17	1.5

Table 3 Commonly used traditional Chinese herb formulas that contain Perilla seed

<i>Formula</i>	<i>Source</i>	<i>Number of Herbs</i>	<i>Content (%) of Perilla Seed</i>
Perilla Fruit Combination	Tai-ping-hui-min-he-ji-ju-fang	10	12.5
Ephedra and Morus Formula	Tai-ping-hui-min-he-ji-ju-fang	7	10.0
Ephedra and Ginkgo Combination	Yi-fang-ji-jie	9	8.8
Atractylodes and Cardamom Combination	Wan-bing-hui-chun	12	7.8

Table 4 Chinese herb formulas that contain Perilla seed as recorded in the pharmacopoeia of PRC

<i>formula</i>	<i>Number of Herbs</i>	<i>Content (%) of Perilla Seed</i>
Juhong Pills	15	5.6
Shensu Pills	11	10.7

in Tables 1 and 2. And some commonly used Chinese herb formulas containing Perilla seed or fruit are shown in Tables 3 and 4.

The so-called *qi* formulas are those used for resolving depression, descending *qi* adversity, and replenishing *qi* or for symptoms such as epigastric distension, swelling pain, flatulence, vomiting, nausea, vomiting up acid fluid, *qi* adversity, and asthma. In all, formulas capable of regulating the *qi* functions and treating the various *qi* problems are known as *qi* formulas. In the following are given a few representative *qi* formulas that contain Perilla leaf or Perilla seed as a component herb.

Pinellia and Magnolia Combination

Formula composition: pinellia 6.0 g, magnolia bark 3.0 g, hoelen 5.0 g, fresh ginger 4.0 g, Perilla leaf 2.0 g.

This formula was first recorded in a Chinese medical classic named "Jin Gui Yao Lue" (Prescriptions from the Golden Chamber) which was written in the Han dynasty of China about 1800 years ago. The formula is a representative *qi* formula which the ancients used for treating the so-called "plum kernel *qi*" (a symptom marked by a sensation in the throat where it feels as if something like a plum kernel or a piece of grilled meat is clogged there) and has been applied to the treatment of various *qi* problems (neurosis).

The formula has the function of relieving mental depression and is thus suitable for those with gastrointestinal asthenia, feeble and lax skin and muscles, mild intestinal tympanites, a sensation of gastric distension, and water stagnated in the stomach. In these patients their pulses are usually floating and weak or demersal and weak. People with such a constitution are mostly very careful, easily becoming sullen, depressed, languid, somatically weak and fatigable. In this formula, Perilla leaf possesses a mild excitant effect capable of relieving mental depression and activating the gastrointestinal functions to approach a vigorous state.

This formula is indicated for neurosis, neurasthenia, hysteria, nervousness-associated insomnia, phobia, neurotic esophageal stenosis, paroxysmal cardiac hyperfunction, esophageal spasms, bronchitis, hoarseness after a cold, asthma, pertussis, pregnancy vomit, climacteric syndrome, gastroparesis, gastric laxity, and edema (Hsu *et al.*, 1980).

Ephedra and Magnolia Combination

Formula composition: ephedra 5.0 g, licorice 2.0 g, apricot seed 4.0 g, Perilla leaf 1.5 g, magnolia bark 3.0 g, bupleurum 2.0 g, citrus rind 2.5 g.

This formula was originally recorded in the "Wai Tai Mi Yao" (An Extraminister's Secret Formulas) written by Wang Tao (675–755 A.D., Tang dynasty). It treats chronic cough which at onset manifests panting asthma causing the patient unable to sit or lie down and producing incessant wheezes in the throat followed by asphyxia. In the original text, this formula did not contain magnolia bark and licorice which were later added by Japanese herbal physicians to augment the therapeutic effects according to their clinical experiences. The formula is used in those with dyspnea as the chief complaint, and scanty phlegm associated with bronchial asthma, showing *qi* depression. Usually the formula is used for the target symptoms of weak abdominal strength, and a not very tense condition in the lower torso in patients who show only slight chest and hypochondriac distress, not much phlegm, dyspnea along with neurosis. The Perilla leaf contained in this formula possesses the effects of eliminating wind and cold evils, and, acting together with magnolia bark, descending *qi*.

This formula is indicated for bronchial asthma, pediatric asthma, and pulmonary emphysema (Hsu *et al.*, 1980).

Perilla Fruit Combination

Formula composition: Perilla seed 3.0 g, pinellia 4.0 g, citrus rind 2.5 g, magnolia bark 2.5 g, peucedanum 2.5 g, cinnamon twig 2.5 g, angelica (*Radix Angelicae sinensis*) 2.5 g, jujube 1.5 g, licorice 1.5 g, fresh ginger 1.5 g.

The formula is recorded in the "Tai Ping Hui Min He Ji Ju Fang" (Taiping Folks Beneficiary Dispensatory) completed in the Song dynasty of China, which is equivalent to the "Zi su zi tang" (Perilla seed decoction) recorded in the "Qian Jin Fang" (Formulas Worth One Thousand Pieces of Gold). This formula can treat chilling in the lower limbs, discontinued respirations, and dyspnea, which are often seen in the physically asthenic or senile individuals who usually manifest the symptoms of adynamia in the lower torso (below the umbilicus), oliguria, copious phlegm, short breaths with up-flushing, a stringy tense pulse that appears surging and big but forceless, and subcardiac depression. In the formula, Perilla seed, peucedanum, magnolia bark, citrus rind, pinellia and cinnamon twig all act to descend the *qi* upward adversity. Also, once the *qi* gets soothed, the phlegm is also soothed and unstagnated and hence the formula is also expectorant.

The formula is indicated for chronic bronchitis, asthmatic bronchitis, pulmonary emphysema, tinnitus, hematemesis, nosebleed, alveolar pyorrhea, oral erosion, oral cancer, edema, and beriberi (Hsu *et al.*, 1980).

Formulas capable of rendering diaphoresis, resolution of muscles and completion of eruption are known as sudorific formulas or diaphoretics which make use of the diaphoretic and muscle resolving effects to expel the pathic evil out of the surface (skin) or muscles where the evil has just invaded. Diaphoretic formulas mostly have a pungent taste, a volatile and mildly emanative property, and should be decocted gently instead of excessively, otherwise the drug quality will be lost and the efficacy reduced. Meantime, after taking a diaphoretic formula, one should avoid wind drafts or cold things, increase clothing or quilts in order to augment perspiration. The perspiration so induced should better be only to such an extent that the body is just wetted but not thoroughly wetted out. Either an incomplete perspiration or a perspiration that causes copious sweating to make the whole body soaked with dripping sweats is not the right way of rendition of perspiration, because the former condition cannot drive out the evil completely, while the latter condition can drive the evil out completely though, it is overdone and in that way it also has exhausted the primordial *qi*. A few more commonly used diaphoretic formulas containing Perilla leaf or Perilla seed are given below.

Cyperus and Perilla Formula

Formula composition: cyperus 3.5 g, Perilla leaf 1.5 g, citrus rind 3.0 g, licorice 1.0 g, fresh ginger 1.0 g.

This formula also comes from the "Tai Ping Hui Min He Ji Ju Fang". It is a representative diaphoretic *qi* formula especially good for treating *qi* stagnation and surface evil manifesting *qi* symptoms. It is suitable for those afflicted with a cold that is accompanied by both *qi* and food stagnation and for a cold in those with a weak stomach,

or for symptoms induced by *qi* depression and food stagnation. The target symptoms of this formula include a demersal pulse, subcardiac distension, shoulder ache and pain, headache, vertigo, tinnitus, nausea, and *qi* stagnation. In the formula Perilla leaf acts as a diaphoretic capable of dispersing surface evils and improving blood circulation, and in particular it possesses a therapeutic effect for poisoning from eating fish.

This formula is indicated for common cold, neurasthenia, neurotic abdomen ache, climacteric syndrome, menopause, fish poisoning, urticaria, neurosis, anosmia, and stuffy nose. (Hsu *et al.*, 1980). There are many modified formulas derived from this formula.

Ginseng and Perilla Combination

Formula composition: Perilla leaf 1.0 g, platycodon 2.0 g, "zhi-qiao" (Fructus Aurantii) 1.0 g, citrus rind 2.0 g, pinellia 3.0 g, hoelen 3.0 g, pueraria 2.0 g, peucedanum 2.0 g, ginseng 1.5 g, costus root 1.0 g, licorice 1.0 g, jujube 1.5 g, fresh ginger 1.5 g.

This formula is included in the "Tai Ping Hui Min He Ji Ju Fang". It is a formula with surface-internal dual resolution effect suitable for treating common cold in any season, fever, headache, cough with water stagnancy, or internal injury by food and drink, gastric obstructive distension, vomiting, and nausea. Patients with the above conditions are usually weak constitutioned who are not suitable for treatment with ephedra-containing formulas or Pueraria Combination. Hence, the formula is often used in small children, senile individuals, asthenic people, and pregnant women who have a cold with cough. In this formula the Perilla leaf together with pueraria and peucedanum possesses a carminative effect.

The formula is indicated for common cold, bronchitis, pneumonia, *qi* impediment, pregnancy vomit, alcohol intoxication (Hsu *et al.*, 1980).

Ephedra and Morus Formula

Formula composition: ephedra 4.0 g, morus root bark 2.0 g, Perilla seed 2.0 g, apricot seed 4.0 g, hoelen 5.0 g, citrus rind 2.0 g, licorice 1.0 g.

This formula is listed in the "Tai Ping Hui Min He Ji Ju Fang" as the one formula among all ephedra-containing formulas that is most suitable for a deficiency conformation (symptom complex). It is good for treating contractions of wind and cold evils in the lungs, coughing with up rushing of *qi*, pectoral distress, spasms in the nape and back, stuffy nose with low heavy voice, dizziness and vertigo, nonfluent discharge of phlegm, a floating and quick pulse and gastrointestinal asthenia with loss of appetite. Although this formula is similar to Ginseng and Perilla Combination, yet unlike the latter which is used mostly in the senile, this formula is used mostly in small children. In this formula Perilla seed as well as hoelen, citrus rind and morus root bark is a *qi* regulating herb capable of augmenting antitussive, expectorant and antiasthmatic effects.

The formula is indicated for common cold, coughing, asthma, stuffy nose, bronchitis, pediatric asthmatic cough (Hsu *et al.*, 1980).

Both Perilla leaf and Perilla seed are important drug materials. Though the distinct uses with the two herbs have been mentioned in Chinese medical classics, there remain many problems requiring investigation in terms of their clinical application.

CONCLUSION

As a conclusion, in traditional Chinese medicine Perilla leaf is believed to be capable of rendering perspiration, resolving fever, moving *qi*, relieving the centres and antidoting poisoning from eating fish and crab, and is therefore indicated for common cold due to contraction of winds and cold, cough, asthma, pectoral and abdominal distension, tranquillisation, and stomach strengthening. Perilla stalk is believed to possess the effects of soothing *qi*, stabilising the embryo and thus can be used for treating *qi* adversity, abdomen ache, and embryonic aching and instability. Perilla seed or fruit possesses the effects of descending *qi*, arresting asthma, stopping cough, resolving phlegm, relieving the chest and alleviating depression and is thus commonly used for treating cough due to *qi* adversity, phlegmatic stridor, qiimpediment and constipation. However, in Chinese herbal medicine these herbal articles are usually used in combination with other herbs in a prescription and are seldom used alone.

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