

## Sweating Method in *Shang Han Lun*

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### Introduction

Sweating method (汗法) is the first therapeutic methods described in *Shang Han Lun* (伤寒论 Treatise on Cold Damage Disease) by Zhang Zhongjing in the East Han Dynasty (3<sup>rd</sup> century AD, about 200-219 AD).

This method is mainly used for treating exterior syndrome of Taiyang Disease (Greater Yang) Disease. Its first representative formula is Mahuang Tang (麻黄汤 Ephedra Decoction).

Additionally, there are many other formulas that can also be classified in the category of sweating method to treat associated or deteriorated syndromes mainly in Taiyang Disease. These formulae are:

Gegen Tang (葛根汤 Pueraria Decoction)

Da Qinglong Tang (大青龙汤 Major Blue Dragon Decoction)

Xiao Qinglong Tang (小青龙汤 Minor Blue Dragon Decoction)

Mahuang Xingren Gancao Shigao Tang (麻黄杏仁甘草石膏汤 Ephedra, Bitter Apricot Seed, Licorice and Gypsum Decoction)

Guizhi Mahuang Ge Ban Tang (桂枝麻黄各半汤 Half Cinnamon Half Ephedra Decoction),

Guizhi Er Mahuang Yi Tang (桂枝二麻黄一汤 Two Cinnamon One Ephedra Decoction)

Mahuang Xixin Fuzi Tang (麻黄细辛附子汤 Ephedra, Asarum and Aconite Decoction)

Mahuang Fuzi Gancao Tang (麻黄附子甘草汤 Ephedra, Aconite and Licorice Decoction)

### The formulae and Their Clinical Use

In this article, we will discuss the above formulae one by one.

#### 1. Mahuang Tang (麻黄汤 Ephedra Decoction)

Mahuang Tang consists of following ingredients:

Mahuang/Herba Ephedrae (with joints removed) 3 *Liang*/9g (Notes: in the UK, you may choose *Xiangru*/ Herba Moslae 9g instead of Mahuang/Ephedra)

Guizhi/Ramulus Cinnamomi 2 *Liang* /6g  
Zhi Gancao/Radix Glycyrrhizae Praeparatae 1 *Liang*/3g  
Xingren/Semen Armeniacae Amarum (with its skin removed) 70 pcs / 9g

Traditionally, boil Mahuang in water (9 *Sheng*= 198.1mlx9) first until 2 *Sheng* (198.1mlx2) of the water has been reduced, then remove the froth (which contains more ephedrine). Add all other herbs and boil until the decoction is reduced to 2.5 *Sheng*=198.1mlx2.5.

Then remove all the herbs, drink 8 *Ge* (19.81mlx8) of the decoction when it is warm, if necessary 2-3 times a day. After drinking the decoction, ask the patient to stay in a warm bed to induce slight perspiration.

The main function of Mahuang Tang inducing sweat to relieve the exterior excess syndrome, and smoothing the lung's descending function to relieve cough and asthma.

Among the ingredients, Mahuang dispels pathogenic wind-cold from the exterior by inducing sweat, and also relieves asthma, acting as the principal herb in the formula. In the UK, we may choose Xiangru/Herba Moslae instead of Mahuang/Ephedra, as the use of Mahuang is prohibited. Guizhi, as an assistant, can dispel pathogenic wind-cold. The combination of Mahuang or Xiangru and Guizhi has a strong diaphoretic function. Xingren brings down the abnormal ascending of the lung-*qi*, and helps Mahuang to ease cough and asthma as an adjuvant herb. Zhi Gancao can reinforce the middles-*jiao*, replenish *qi* as well as harmonize all ingredients in the recipe as a guiding herb.

We can find 7 clauses (35, 36, 37, 46, 51, 52, 55, 232 and 235) on indications of Mahuang Tang in *Shang Han Lun*.

Clause 35 of *Shang Han Lun* states that "Taiyang disease with headache, fever, body aches, back pain, joints pain, aversion to wind, dyspnea without perspiration, use Mahuang Tang". In this clause, Zhang Zhongjing listed most of the essential symptoms and signs of Mahuang Tang syndrome. When we look at Clause 3, we know that the pulse in Mahuang Tang syndrome is floating and tight.

However, on some occasions, Zhang Zhongjing did not list all the symptoms, but only mentioned one or two signs, or just saying an exterior syndrome which should be treated by Mahuang Tang. For instance, in Clause 51 it states that "a floating pulse signifies an exterior syndrome, sweating method should be used. Use Mahuang Tang"; and in Clause 52, "a floating and rapid pulse requires sweating method, use Mahuang Tang".

Zhang Zhongjing also used Mahuang Tang for treating nose-bleed caused cold damage to blood vessels. This is stated in Clause 55, "In cases of cold damage syndrome, epistaxis occurs due to failure in the use of diaphoretics, with floating and tense pulse, Mahuang Tang is right choice."

Additionally, Zhang Zhongjing also used Mahuang Tang for treatment of asthma and fullness in the chest, which can be seen in Clause 36, "A syndrome involving taiyang and yangming simultaneously, the patient suffers from asthma and fullness in chest, never use a purgative. Mahuang Tang should be used." However, in Clause 232 and 235, sweating method was also used to treat the exterior syndrome of taiyang with yangming disease, manifesting as floating pulse, asthma and no perspiration for taiyang and fullness of the stomach for yangming.

Clinically, Mahuang Tang can be used years to treat common cold, influenza, and upper respiratory tract infection that manifested as fever, aversion to cold, no sweating, body aches, cough or asthma, floating and tense pulse. It can also be used for treating asthma and cough of wind-cold excess syndrome caused by upper respiratory tract infection, pneumonia, bronchitis and asthma and for arthralgia caused cold-wind.

Researches have found that Mahuang and Guizhi can excite sweat glands in the thenar of hamsters. Volatile oil of Mahuang can inhibit activities of influenza virus (AR8) that may be a base to treat influenza. A Japanese Dr Xi Ze Fang Nan (*Nishi Zawa Yoshi O*) found Mahuang Tang can inhibit histamine released by basophilic cell and mast cell during allergic reaction.

## 2. Gegen Tang (葛根汤 Pueraria Decoction )

There are 2 clauses (Clause 31 and 32) on Gegen Tang in *Shang Han Lun*; and also 1 clause in Chapter 7 of *Jin Kui Yao Lue*.

Clause 31 states that "taiyang disease, marked by stiffness in the neck and back, aversion to wind without perspiration, use Gegen Tang". Here we can understand the indication of Gegen Tang is the symptoms and signs of Mahuang Tang syndrome plus stiffness in neck and back; while in Clause 32, it states that "syndrome of taiyang with yangming, the patient has diarrhea, use Gegen Tang", indicating that Gegen Tang is used to treat the syndrome involving taiyang and yangming with diarrhea.

Gegen Tang consists of following ingredients:

Gegen/Radix Puerariae 4 *Liang*/12g

Mahuang/Herba Ephedrae (with joints removed) 3 *Liang*/9g (Notes: in the UK, you may choose Xiangru/Herba Moslae 9g instead of Mahuang)  
Guizhi/Ramulus Cinnamomi 2 *Liang* /6g  
Shengjiang/Rhizoma Zingiberis 3 *liang*/9g  
Zhi Gancào/Radix Glycyrrhizae Praeparatae 2 *Liang*/6 g  
Shaoyao/Radix Paeoniae 2 *Liang*/6g  
Dazao/Fructus Jujubae 12 pcs

The administration for Gegen Tang is very similar to Mahuang Tang. Boil Gegen and Mahuang first in water (1 *dou* = 198.1mlx10) until 2 *Sheng* (198.1mlx2) of the water is reduced. Then remove the froth.

Add all other herbs and boil until the decoction is reduced to 3 *sheng*=198.1mlx3.

Drink 1 *Sheng* (198ml) of the decoction when it is warm. After drinking the decoction, ask the patients to stay in a warm bed to induce slight perspiration.

The main function of Gengen is to relieve tension in the neck and shoulders, and also stop diarrhoea. Today we often use modified Gegen Tang for treating common cold, acute enteritis and cervical spondylopathy, particularly in cold or flu when the patient has Mahuang Tang symptoms and at the same time, has neck and shoulder strain, ache and pain.

It has been reported that Gegen tang can be used to treat chronic rhinitis and acne. In dog and cat, Gegen Tang can dilate blood vessels and promote blood circulation in the neck and the brain, thus relieving the state of insufficiency of blood supply to the brain. This finding could be the underlining support for using Gegen Tang to treat stiff neck and shoulder strains.

### 3. Da Qinglong Tang (大青龙汤 Major Blue Dragon Decoction)

In *Shang Han Lun*, Da Qinglong Tang appears in Clause 38 and 39; and also there is one clause on this formula in Chapter12 of *Jin Kui Yao Lue*.

In Clause 38, Zhang Zhongjing uses Da Qinglong Tang to treat shanghan syndrome with complication of interior heat, stating that “taiyang zhongfeng syndrome, characterized by floating and tense pulse, fever and chills, body aches and pains, restlessness and no perspiration, use Da Qinglong Tang” and in Clause 39, it states that “shanghan syndrome with floating and moderate pulse, no aching but feeling heavy of the body, no shaoyin syndromes, use Da Qinglong Tang.”

Da Qinglong Tang consists of the following ingredients:

Mahuang/Herba Ephedrae (with joints removed) 6 *Liang*/18g (Notes: in the UK, you may choose *Xiangru/ Herba Moslae* 9g instead of *Mahuang/Ephedra*)  
Guizhi/Ramulus Cinnamomi 2 *Liang* /6g  
Zhi Gancao/Radix Glycyrrhizae Praeparatae 2 *Liang*/6g  
Xingren/Semen Armeniacae Amarum (with its skin removed) 40 pcs / 4g  
Shigao/ Gypsum Fibrosum a piece as the size of an egg / 30 g  
Shengjiang/Rhizoma Zingiberis 3 *Liang* /9g  
Dazao/ Fructus Ziziphi Jujubae 10 pcs

Da Qinglong Tang relieves the exterior cold-wind and at the same time it also clears heat away from the interior. It has all the ingredients of Mahuang Tang, although the dosages are different, particularly the dosage of Mahuang is doubled. In addition, Shigao is a main ingredient to clear away interior heat; Shengjiang is added to strengthen the sweating effect of Mahuang; Dazao is added for regulating spleen and stomach, nourishing ying and wei when it combines with Gancao and Shengjiang. All ingredients working together, Da Qinglong Tang functions in dispelling the exterior cold by inducing sweating, and at the same time clearing away interior heat to relieve restlessness.

The formula is named “Da Qinglong Tang/Major Dragon Decoction because it is said that the sweat that flows after taking Da Qinglong Tang is just like a heavy rain created by a Dragon. Today we usually use Da Qinglong Tang for treatments of common cold, influenza, acute rheumatism and bronchitis caused by acute attack from external pathogens, which are marked by a syndrome of exterior cold with interior heat.

#### **4. Xiao Qinglong Tang (小青龙汤 Minor Blue Dragon Decoction)**

Xiao Qinglong Tang can be found in Clause 40 and 41; and also there are two clauses on this formula in Chapter 12 and one clause in Chapter 20 of *Jin Kui Yao Lue*.

In *Shang Han Lun*, Zhang Zhongjing used Xiao Qinglong Tang to treat shanghan syndrome complicated with retention of Tanyin/Rheum, a type of water retention in the chest and lung in Traditional Chinese Medicine.

In Clause 40, Zhang Zhongjing states that “Shanghan exterior syndrome does not clear, complicated with water retention below the heart, manifesting as retching, fever, and cough; or there might also be other symptoms such as thirst, diarrhea, hiccapping, dysuria, or lower abdominal distention, or dyspnea, use Xiao Qinglong Tang”. In Clause 41, it says that “Shanghan syndrome complicated with water retention below the heart, manifests as cough, with slight dyspnea, fever without thirst. But when the patient feels thirsty after

taking the decoction, it signifies that the external cold is going to clear. Use Xiao Qinglong Tang.”

Xiao Qinglong Tang consists of the following:

Mahuang/Herba Ephedrae (with joints removed) 3 *Liang*/9g  
Shaoyao/Radix Paeoniae 3 *Liang*/9g  
Xixin/Herba Asari 3 *Liang*/3g  
Ganjiang/Rhizoma Zingiberis 3 *Liang*/9g  
Zhi Gancao/Radix Glycyrrhizae Praeparatae 3 *Liang*/9g  
Guizhi/Ramulus Pinelliae 3 *Liang*/9g  
Wuweizi/Fructus Schisandra Chinensis half *Sheng*/9g  
Banxia/Rhizoma Pinelliae half *Sheng*/9g

In this formula, Mahuang and Guizhi are the principal herbs. They act in combination to induce sweat and relieve the exterior by dispelling pathogenic cold, and facilitating the flow of lung-qi to relieve dyspnea. Ganjiang and Xixin warm the lung and remove phlegm and water from the lung system to relieve cough and dyspnea. Shaoyao has the effects of nourishing ying and astringing yin, when used in combination with Guizhi, can regulate ying-wei, and prevent Mahuang and Guizhi from inducing too much perspiration. Wuweizi has the abilities to astringe the lung to relieve cough and prevent exhausting the lung-qi caused by Mahuang and Guizhi. Banxia resolves phlegm and the retained water and regulates the stomach to relieve vomit and dysphagia. In this formula, Mahuang, Guizhi, Shaoyao and Zhi Gancao are used to expel external pathogen and water, while Ganjiang, Xixin, Wuweizi and Banxia are specifically for resolving the retained water.

Research has shown that Xiao Qinglong Tang has the effects of inducing sweating, reducing fever, relieving dyspnea and cough, removing phlegm and promoting diuresis. It also relieves allergic reaction and promotes blood circulation. Clinically we can apply Xiao Qinglong Tang to patients with asthma and bronchitis marked by cold-phlegm syndrome. It is one of the most effective formulae in *Shang Han Lun*.

#### **5. Mahuang Xingren Gancao Shigao Tang (麻黄杏仁甘草石膏汤 Ephedra, Bitter Apricot Seed, Licorice and Gypsum Decoction)**

This formula is in Clauses 63 and 162. Both clauses discuss the syndrome of heat affecting the lung, manifesting as asthma (cough), perspiration and fever. In Clause 63, it states that “After the use of sweating methods, Guizhi Tang must not be used again. If the patient manifests as perspiration with dyspnea while the fever is not high, he should be treated with Mahuang, Xingren, Gancao and Shigao Tang.” In Clause 162, it states that “After the

use of purgative method, Guizhi Tang must not be used again. If the patient manifests as perspiration with dyspnea while the fever is not high, he should be treated with Mahuang, Xingren ,Gancao and Shigao Tang.”

In both situations, the patient was not treated properly. The former is the improper use of sweating method, and the latter is the improper use of purgative method. Both situations are about heat congests in the lung, causing severe lung heat. Therefore, when it says the fever is not high, it does not mean lung heat is not severe. In some clinical cases, the fever can be very high.

Mahuang Xingren Gancao Shigao Tang consists of the following ingredients:

Mahuang/ Herba Ephedrae 4 *Liang*/6g  
Xingren/ Semen Armeniaecae Amarum 50 pcs/9g  
Zhi Gancao/Radix Glycyrrhizae Praeparatae 2 *Liang*/6g  
Shigao/ Gypsum Fibrosum half *Jin*/30g

In this formula, Mahuang acts as the principal herb, facilitating the flow of lung-qi to relieve dyspnea. We can use Baiguo /Ginkgo seed/Semen Ginkgo 9g instead of Mahuang as it is not allowed to use in the UK. Shigao with its dosage five times of Mahuang, plays the role of an assistant herb with the effect of both purging lung-heat and containing the warm property of Mahuang. Again we can use Huangqin to replace it as Shigao is a mineral and its used may not be allowed. Xingren is bitter taste and warm. It is used as an assistant herb to reinforce the effects of Mahuang and Shigao to facilitate the flow of lung-qi and relieve dyspnea and cough. Gancao is used as a guiding herb to tonify qi and regulate the middle-jiao, and coordinate the effect of all ingredients to prevent the cold and heavy property of Shigao impairing the stomach.

Modern research indicates that this formula has the effect of subduing inflammation, removing phlegm, relieve dyspnea and cough, and also antivirus. Clinically we often apply Mahuang Xingren Gancao Shigao Tang to treat acute bronchitis, bronchial pneumonia or asthma marked by the syndrome of heat congesting the lung system.

**6. Guizhi Mahuang Ge Ban Tang (桂枝麻黄各半汤 Half Cinnamon Half Ephedra Decoction); Guizhi Er Mahuang Yi Tang (桂枝二麻黄一汤 Two Cinnamon One Ephedra Decoction)**

Guizhi Mahuang Ge Ban Tang and Guizhi Er Mahuang Yi Tang are for mild Taiyang syndromes.

Guizhi Mahuang Ge Ban Tang is found in Clause 23 of *Shang Han Lun*. It states that “8 to 9 days after Taiyang Disease, the patients has fever and chills like malaria, fever appearing more often than chill. The symptoms occurs 2 or 3 times a day, if the patient has normal urination and stool, and no nausea, and if the patient has a flushed face and itchy skin that signifies the exterior syndrome has not been cleared. To this case, only mild sweating method is needed. Guizhi Mahuang Ge Ban Tang would be most appropriate.”

We can see from this clause, Zhang Zhongjing used this formula for treating a mild exterior syndrome manifested as mild fever and chills, a flushed face and itchy skin without perspiration. In this situation, using Guizhi Tang is too weak, but using Mahuang Tang is too strong. If using half of the former and half of the latter, it would be perfect.

Guizhi Mahuang Ge Ban Tang consists of the following:

Guizhi/Ramulus Cinnamomi 1 *Liang* and 16 *Zhu*/4g  
Shaoyao/Radix Paeoniae 1 *Liang*/3g  
Shengjiang/ Rhizoma Zingiberis 1 *Liang*/3g  
Zhi Gancao/Radix Glycyrrhizae Praeparatae 1 *Liang*/3g  
Mahuang/ Herba Ephedrae 1 *Liang*/3g  
Dazao/ Fructus Ziziphi Jujubae 4 pcs/3g  
Xingren/ Semen Armeniaecae Amarum 24pcs/3g

In fact this formula is a combination of Guizhi Tang (which we have discussed in our article *Harmonizing Method in Shang Han Lun*) plus Mahuang Tang in a ratio of 1:1. Or mix 1/3 of the decoction of Guizhi Tang with 1/3 the decoction of Mahuang Tang, as stated in the original clause.

As the ingredients are in small dosage, it is mildly diaphoretic for treating mild syndrome of the exterior syndrome. Clinically this formula can also be used for odorous sweating and urticaria, a common allergic skin condition.

Guizhi Er Mahuang Yi Tang appears in Clause 25. It states that that” After taking Guizhi Tang, if the patient perspires heavily and the pulse is full and huge, Guizhi Tang can still be used. If the patient has fever and chills twice a day like malaria, then a mild sweating method is required. Using Guizhi Er Mahuang Yi Tang would be appropriate”.

This formula is a combination of the decoctions consisting of 2/3 of Guizhi Tang and 1/3 of Mahuang Tang. For the exact dosages, please refer to the original clause. Its sweating effect is milder than Guizhi Mahuang Ge Ban Tang.

Clinically we can use this formula for treatments of common cold, Raynaud's disease, asthma and urticaria.

**7. Mahuang Xixin Fuzi Tang (麻黄细辛附子汤 Ephedra, Asarum and Aconite Decoction) and Mahuang Fuzi Gancao Tang (麻黄附子甘草汤 Ephedra, Aconite and Licorice Decoction)**

Mahuang Xixin Fuzi Tang is described in Clause 301, stating that “at an early stage of Shaoyin Disease, the patient has fever and deep pulse, use Mahuang Xixin Fuzi Tang”.

This clause indicates that Mahuang Xixin Fuzi Tang is used for the early period of Shaoyin Disease, with a complication of exterior syndrome. The situation is the the patient has kidney yang deficiency, but has caught wind-cold in Taiyang. Therefore, although he has fever, the pulse is deep instead of floating. In treatment, it should be expelling wind-cold from the exterior and boosting yang qi in the interior.

Mahuang Xixin Fuzi consists of the following:

Mahuang/Herba Ephedrae 2 *Liang*/6g  
Xixin/Herba Asari 2 *Liang*/3g  
Fuzi/Radix Aconiti Praeparata 1pcs/6g

Clinically in China, apart from using this formula for treating cold with yang deficiency, this formula were used for facial paralysis, migraine and trigeminal neuralgia. It is almost impossible now to use this formula in the UK due to restrictions on the ingredients of this formula.

Mahuang Fuzi Gancao Tang is found in Clause 302, saying that “when a patient has Shaoyin Disease for two to three days, Mahuang Fuzi Gancao Tang can be used as a diaphoresis to induce a mild perspiration. The reason for this is that there is no interior syndrome on the second and third days, therefore, a mild sweating method can be used.”

This clause indicates that Mahuang Fuzi Gancao Tang is used for a slightly later stage of Shaoyin Disease with a complication of exterior syndrome than that of Mahuang Xixin Fuzi Tang.

Mahuang Fuzi Gancao Tang consists of following:

Mahuang/Herba Ephedrae 2 *Liang* /6g  
Fuzi/Radix Aconiti Praeparata 1pcs/6g  
Zhi Gancao/Radix Glycyrrhizae Praeparatae 2 *Liang*/6g

In this formula, Zhi Gancao replaces Xixin. Compared with Mahuang Xixin Fuzi, its effect on expelling wind-cold is reduced, but it is better (and milder) in warming the interior.

Clinically in China, apart from using this formula for treating cold with yang deficiency, this formula were also used for treatment of rheumatic arthritis of wind-cold type. Due to restrictions on the ingredients of this formula in the UK, again it is almost impossible to use it now.

In *Shang Han Lun*, both formulas were used for treating shaoyin Disease complicated with exterior syndrome manifested as a deep pulse, fever, and no interior syndrome. Some scholars believe that the fever reflects exterior syndrome of taiyang Disease, and a deep pulse suggests deficiency of shaoyin-yang. Therefore, this condition should be termed “both syndromes of taiyang and shaoyin diseases”.

### **Main Contraindications of Sweating Methods**

The contraindication for sweating method is described in detail in *Shang Han Lun* and can be found in Clause 49, 50, 83, 84, 85, 86, 87, 88 and 89.

Generally speaking, if a patient has such conditions as debilitation of body fluid and deficiency of blood, or insufficiency of body fluid and heat in the lower-jiao, or debilitation of qi and blood, or yang deficiency or yin deficiency, sweating method is contraindicated.

The following are some examples:

Clause 83: “When a patient has a dry throat, do not use the sweating method”.

Clause 84: “For patients suffering stranguria, do not use the sweating method. If it is used, he will develop bloody urine or stool”.

Clause 85: “For patients suffering sores, though the patient has pain of body, do not use the sweating method. If it is used, the patients will develop convulsion”.

Clause 86: “For patients suffering nose-bleed, do not use the sweating method. If it is used, the patient’s pulse in the depression of forehead will be tense; his eyes will be staring straight and fixed and can not close.”

Clause 87: “For patients suffering bleeding, do not use the sweating method. If it is used, the patients will develop shuddering and quivering”.

Clause 88: “For patients suffering frequently sweating problems, do not use the sweating methods. If it is used heavily, the patients will develop trance and panic and pain in the urethra after urination”.

Clause 89: “For patients with cold in the stomach, do not use the sweating method. If it is used, the patient will vomit roundworm”.

Clause 49: “When the pulse is floating and rapid, as a rule using the sweating method should cure the condition. However, if the purgative method is used, a heavy feeling of the body and palpitation will occur. For this condition, the patient should sweat spontaneously, and then the illness is relieved. This is because the pulse at chi is weak, which indicates interior deficiency”.

Clause 50: “When the pulse is floating and tight, usually there should be body pain. This can be treated with sweating method. However, if the pulse at chi is slow, do not use the sweating method. Why? This is because the patient must have deficiencies in the Rong qi (nourishing qi) and blood”.

## **Summary**

The sweating method is one of the 8 methods described in Shang Gan Lun. It is mainly used for treatment of exterior syndrome of taiyang disease. In this article, nine representative formulae in this category have been discussed. We have detailed the original clauses that first described these formulae. We have given explanations to these formulae, their compositions, indications, and usage and counter indications. These formulae should form part of the curriculum of traditional Chinese herbal medicine courses. Their modern use should also be explored further.

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