

# ***Treatment and management of Chronic Cough by TCM – A Case Study***

Di Wu and Ming Cheng  
Middlesex University

Please send all correspondences to

Dr Ming Cheng, Postgraduate Programme Leader and Principal Lecturer Traditional Chinese Medicine Room T154 Town Hall Annex, Hendon Campus Middlesex University  
The Boroughs Hendon  
London NW4 4BT  
Tel: 0044 (0)208 411 2647  
email: m.cheng@mdx.ac.uk

## **Introduction**

The patient has been suffering from chronic cough with phlegm for nearly 30 years. He started to receive acupuncture and Chinese herbal medicine treatment since September 2012. Modified *Qing Qi Hua Tan Wan* and *Shen Ling Bai Zhu San* have been used at acute and chronic stages respectively. Significant improvement has been observed. A summary of the treatment and the usage of above modified formulae during the treatment are discussed below.

## **History of the treatments**

**Date of first consultation:** 05/09/2012

**Gender:** Male

**Age:** 39

**Nationality:** Irish

**Occupation:** Company director

**Chief complaints:**

1. Chronic cough with phlegm
2. Loose stool with occasional diarrhoea

## **History of current illness and symptoms**

The patient had two episodes of pneumonia from age 9 to 11, and has been coughing with phlegm ever since. There is no particular pattern regarding the time and the triggering or alleviating factors. He has been suffering from recurrent chest infections and has to use antibiotics (mostly amoxicillin, and sometimes stronger ones which the patient could not remember the names) at least every two months. The colour of the phlegm is mostly white, but could get greenish when there were chest infections. Even when there is no chest infection, he often feels stuffed and tight in the chest and he also experiences short breath on exertion. He loves sports, but the shortness of breath and tight chest really put him off. He feels frustrated because of this.

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The patient's bowel movement is regular, but the stool is mostly loose and sticky with occasional diarrhoea. He experiences some urgency in both bowel movement and urination. He does not suffer from any bloating, pain or acid reflux.

The patient did not complain about his sleep. He can fall asleep easily but often wakes up a

few times (sometimes only due to the crying baby and can go back to sleep most of the time), and occasionally the sleep can be disturbed by dreams. He sometimes feels tired during the day, but generally feels healthy. He was diagnosed to have Kartagener syndrome and has had one daughter of 12 months old through IVF.

**Tongue:** slightly swollen with some teeth marks. The colour of the tongue is slightly pale. The coating of the tongue is thick, particularly in the middle of the tongue, and the colour of the coating is slightly yellow and sticky.

**Pulse:** wiry, fast and full. The *chi* position is relatively weak.

On the day of his first visit in September 2012, the patient just had one episode of chest infection about a week before. The main symptoms included barking cough with yellow thick phlegm. He felt stuffed in the chest with difficult breathing. He also had some pain in the lung area through coughing. He had some sore throat but no obvious headache. He had been aversion to cold at the beginning, but not anymore on the day of his visit.

### **TCM diagnosis and treatment principles**

Exterior wind-heat invasion combined with interior damp-phlegm. This is an acute excess condition.

Spleen *qi* and Lung *qi* deficiency is the root of the problem and is the cause of the chronic cough and phlegm accumulation. However, in an acute condition, symptoms should be dealt with first. Therefore, in this case, the treatment principle is to clear the Lung heat, descend the Lung *qi* and resolve the phlegm. The background of Spleen and Lung *qi* deficiency should also be considered.

### **Initial and follow-up treatments**

First visit (05 September 2012):

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A modified *Qing Qi Hua Tan Wan* was prescribed:

*Ban Xia* 9g, *Chen Pi* 6g, *Xing Ren* 6g, *Zhi Ke* 6g, *Huang Qin* 8g, *Gua Lou Ren* 6g, *Fu Ling* 6g, *Kuan Dong Hua* 6g, *Zhe Bei Mu* 6g, *Bai Zhu* 9g, *Jin Yin Hua* 6g, *Lian Qiao* 6g and *Gan Cao* 6g.

The patient was asked to take the medicine as decoction. 7 bags of dry herbs with the above ingredients were prescribed, 1 bag for one day. An instruction of making decoction was provided to the patient.

Second visit (12 September 2012):

There was still coughing, but it had reduced. The colour of the phlegm was no longer green, but still a bit thick. The patient felt tired. The pulse was deep. The tongue coating was still thick but less yellow.

The above formula was modified. *Jin Yin Hua* and *Lian Qiao* were removed and *Dang Shen* (6g) was added to the formula. The patient was asked to take this formula for further 7 days.

The third visit (17 September 2012):

The overall condition was much improved. There was still cough, but the patient described it as "normal cough", because he had had this kind of cough for many years. There was still phlegm, but it was more watery and the colour of the phlegm was white. The bowel movement had not changed and the stool was generally loose and sticky. There was no change of the tongue and pulse.

A modified *Shen Ling Bai Zhu San* was prescribed:

*Ren Shen* 6g, *Bai Zhu* 10g, *Fu Ling* 10g, *Bian Dou* 10g, *Shan Yao* 15g, *Yi Yi Ren* 10g, *Jie Geng*

9g, *Zhi Gan Cao* 6g, *Chen Pi* 6g, *Zhi Ke* 6g, *Ban Xia* 9g, *Xing Ren* 9g, *Huang Qin* 3g, *Gua Lou* 3g,

and *Wu Wei Zi* 6g.

The patient was asked to take this formula as decoction for 7 days.

The fourth visit (24 September 2012):

The patient felt the condition was slowly improving. He had a bit more energy. There was still cough, but he described it as “not too bad even for the normal standard”. The bowel movement had not change a lot. The pulse deep and slow, and the tongue was the same.

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The same formula was prescribed for the next 6 weeks. The patient visited the clinic every week. During these 6 weeks, the patient reported the improvement was noticeable. The cough did not disappear but noticeably less and the chest felt clearer and no longer had stuffed feeling. The patient took a short holiday to visit his parents, and for the first time during the holiday he could run without feeling short breath. He had been exercising ever since and had no problem. The stool had improved as well. It was more formed, but still not consistent. He felt less urgent before bowel movement and urination.

The patient has been taking similar formula based on modified *Shen Ling Bai Zhu San* so far (with small modification each time). He had a cold once before Christmas and it did not go deep to the chest as it used to happen in the past. When he visited his doctor after Christmas, the doctor, who had been treating him for many years, examined him and said his lungs were much clearer than before and the condition of the lungs had been improved significantly. The patient can have regular exercise now without any breathing problem. The energy has significantly improved. The cough has not disappeared though, but much more manageable. The phlegm is much less and much “looser”. The stool is mostly formed, but is not completely stable. The coating of the tongue is receded and the pulse is stronger.

## Discussion

Cough is one of the most common symptoms in all diseases related to the lungs. Cough was first discussed in *Huang Di Nei Jing* (黄帝内经). The whole Chapter 38 is dedicated to the discussion of cough. The cause of cough was summarized in *Jing Yue Quan Shu* (景岳全书) as external pathogen and internal disharmony. This needs to be first identified in pattern differentiation. It is also important to differentiate excess or deficiency. “The pathology of cough is always characterized by Lung-*qi* failing to descend. This may happen either because the lungs are obstructed by an exterior or interior pathogenic factor (Full type) or because Lung-*qi* is deficient and fails to descend properly (Empty-type).” (Maciocia, 1994, P. 172) Cough caused by exterior pathogen (wind-cold, wind-heat or wind-dryness) is generally full type (excess). The cough from interior causes can be either excess (damp-phlegm, phlegmheat, fire or phlegm-fluid) or deficiency (Lung *qi* or *yin* deficiency). Chronic cough often shows deficiency in some way. For example, the chronic cough from damp-phlegm is excess

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in nature, but the phlegm could be caused by Spleen deficiency, and accumulated phlegm can generate heat and damage the Lung *qi* and Lung *yin* and cause Lung *qi* and *yin* deficiency. Deficiency in interior *zang fu* can make the Lung more susceptible to exterior pathogens. It is described in *Huang Di Nei Jing Ling Shu* (黄帝内经灵枢) that wind, rain, cold and heat, without deficiency, the evil cannot harm the body (风雨寒热，不得虚，邪不能独伤人). (Yao, 2010)

The treatment plan reflected the general principle of “treating the symptoms at acute stage, and treating the root at chronic stage” (急则治其标，缓则治其本). From the first

consultation, it was realized that the cough was chronic and the patient showed symptoms of Spleen *qi* deficiency, which might affect the Lung *qi*, and the Lung *qi* was expected to get depleted from chronic cough. Moreover, “in terms of Chinese medicine, the use of antibiotics, which are cold and damp in nature, will relieve symptoms due to Stomach fire or perhaps *yin* deficiency. However, they severely deplete Spleen *qi* and cause accumulation of damp”. (Gascoigne, 2001, P. 237) However, it was a condition which combined the excess from acute symptoms and deficiency from the chronic underlining issues. In this situation, the acute symptoms should be dealt with first. Therefore the modified *Qing Qi Hua Tan Wan* (in decoction form) was prescribed.

The main functions of *Qing Qi Hua Tan Wan* are to clear the heat and resolve the phlegm, regulate the *qi* and stop coughing (Xu and Wang, 2008). In the original formula, *Dan Nan Xing* is the principal herb. It is bitter, slightly pungent and cool in nature and is used to clear the phlegm-heat. Since *Dan Nan Xing* is not allowed to use by regulation, *Zhe Bei Mu* is used for the similar purpose, and the dosage of *Huang Qin* is slightly increased to clear the Lung heat. In this formula, *Huang Qin*, bitter and cold, is used to clear the fire from upper *jiao*; *Gua Lou Ren*, sweet and cold, is used to clear the Lung and resolve the phlegm; *Zhe Bei Mu*, also bitter and cold, is used to clear the Lung heat and resolve the phlegm. Wang Ang said in *Yi Fang Ji Jie* (医方集解) that it is necessary to reduce the fire in order to treat the phlegm, and it must regulate the *qi* first in order to treat the fire (cited in Xu and Wang, 2008). *Zhi Ke* and *Chen Pi* were used to regulate the *qi* and dry the dampness, because it is important to regulate the *qi* in order to resolve phlegm. *Zhi Ke* was used instead of *Zhi Shi* as in the original formula. Both *Zhi Shi* and *Zhi Ke* are bitter, slightly cold and enter Stomach and

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Spleen meridians. “*Zhi Shi* has stronger bitter taste and it moves downwards strongly.” (Yang, 2010, P. 123) Considering that the patient had loose stool and occasionally had diarrhoea, milder *Zhi Ke* was selected. Another reason of choosing *Zhi Ke* is that “it opens the chest and reduces distension, and is used to treat *qi* stagnation in chest, stomach and hypochondrium, which brings about distension in the upper abdomen, stifling in the chest.” (Yang, 2010, P. 123) Since Spleen is the source of the dampness and phlegm, *Fu Ling* is used to tonify the Spleen and drain the dampness. *Xing Ren* is used to disperse the Lung *qi*. *Ban Xia* can dry the dampness and resolve the phlegm. It helps to resolve the phlegm which already generated, and stops the source of the phlegm (Xu and Wang, 2008). *Bai Zhu* is added to the formula to tonify the Spleen and clear the dampness. This is particularly important considering the patient’s bowel movement pattern. *Kuan Dong Hua* is pungent, slightly bitter and warm in nature. Its main function is to moisten the lung and stop coughing. Although *Kuan Dong Hua* is warm in nature, it can be used in all cold, heat, excess and deficient situations (Gao, 2000). *Gan Cao* is used to tonify the Spleen and harmonize the herbs in the formula, and *Gan Cao* itself is also useful to stop coughing. “It treats coughing and wheezing of various aetiologies, including cold or heat, and deficiency or excess, with or without phlegm.” (Chen & Chen, 2004, P. 867) *Jin Yin Hua* and *Lian Qiao* were added to the formula because the patient’s condition was in an acute stage with green coloured phlegm. Both *Jin Yin Hua* and *Lian Qiao* are cold in nature and enter the Lung meridian. They can be used in heat clearance and detoxification. *Jin Yin Hua* and *Lian Qiao* are often used together in febrile disease, such as in *Yin Qiao San*. (Zhang, 1990)

On the second visit, the patient felt better. The colour of the phlegm was no longer green and the tongue coating was less yellow as well, but the patient still had cough and phlegm

and felt tired from heavy coughing. *Jin Yin Hua* and *Lian Qiao* were therefore removed from the formula and *Dang Shen* was added to tonify the depleted Spleen and Lung *qi* due to the illness.

On the third visit, the acute symptoms had disappeared, but the chronic cough had not stopped. This was described by the patient as his “normal cough”. From this visit, the treatment principle changed from clearing the Lung heat and resolving the hot phlegm to solidify the root through tonifying Spleen and Lung *qi*, descend the Lung *qi*, stop coughing and resolve phlegm.

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The formula is based on *Shen Ling Bai Zhu San*, which is a fundamental formula for tonifying the Spleen *qi*, draining dampness and stopping diarrhoea. It also reflects the theory of “solidifying the earth and generating the metal” (培土生金), therefore benefits the lungs. In this formula, *Ren Shen*, *Bai Zhu*, *Fu Ling* and *Zhi Gan Cao* are based on *qi* tonic formula *Si Jun Zi Tang*. *Shan Yao* and *Bian Dou* (*Lian Zi* was not used due to availability) tonify the Spleen and Stomach mildly and help to stop diarrhoea. *Zhi Gan Cao* is used here because it has more tonifying effect for Spleen compared with *Sheng Gan Cao*. The dosage of *Huang Qin* and *Gua Lou* has been reduced because the patient no longer showed the sign of heat phlegm. *Shan Yao* and *Bian Dou* benefit the Spleen and Stomach and stop the diarrhoea. *Fu Ling* and *Yi Yi Ren* drain the dampness and tonify the Spleen. *Chen Pi* and *Zhi Ke*, as in the previous formula, help to regulate the *qi* and descend the Lung *qi*. *Chen Pi* is often used in tonifying formula to regulate the *qi* and prevent the tonic herbs causing stagnation. It is “aromatic and warm to promote the downbearing of *qi*, regulates the middle and frees the diaphragm”. (Li *et al*, 2008, P. 177) *Jie Geng* in this formula plays an important role of taking the other herbs upwards and helps to disperse the Lung *qi*. “The inclusion of *Jie Geng* as a channel conductor guides the other medicinals to the upper *jiao* to support the Lung, for its light, floating, and ascending nature enriches Lung *yin* and upbears Lung *qi*”. (Hu and Dong, 2008, P. 141) It brings the Spleen *qi* upwards and nourishes the Lung. This reflects the theory of solidifying the earth and generating the metal. *Wu Wei Zi* was used because it is astringent and enters Lung, Heart and Kidney meridians. One of its main functions is to treat chronic empty cough (Zhang, 1990).

### **Prognosis and future treatment**

The patient has noticed significant improvement in regard to the severity of the cough, the texture of the phlegm, the breathing, energy and bowel movement pattern. However, it is noted that the patient is still coughing with phlegm, and the improvement of bowel movement is not consistent. This indicates the current treatment is on the right direction, but a prolonged treatment is necessary.

Modified *Shen Ling Bai Zhu San* or *Si Jun Zi Tang* can still be used in this case, with added herbs to resolve the phlegm, descend the Lung *qi* and stop coughing. In the future treatment, *Huang Qi* can also be used in the modified formula, as *Huang Qi* can tonify both

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Spleen and Lung *qi*, and its *qi* tonic effect can be strengthened when used along with *Ren Shen* (Gao, 2000).

Strengthening Kidney is another area worth considering in the future treatment. Kidney is considered as “the root of life” (Maciocia, 2005). This can be understood in two aspects. On the one hand, the Kidney *yin* and Kidney *yang* derived from Kidney essence are the primary *yin* and *yang*. They support the whole body and affect the physiological functions of all

other organ systems. In particular, Kidney *yang* provides the Spleen with the heat it needs to carry out its function of transforming and transporting fluid (Maciocia, 2005). On the other hand, chronic disease or malfunction of any other organ system will eventually affect the Kidney. Another important function of the Kidney is to hold the *qi*, which is descended from the Lung. The Lung's descending function will be impaired if the Kidney does not receive the *qi* properly. The patient was diagnosed to have Kartagener syndrome, a rare condition which affects the cilia of both the Lung and the sperm, and therefore affecting the mobility of the sperm. He also experiences urgency of urination and bowel movement. Since the Kidney controls the fertility and lower orifices, these could indicate the potential need of tonifying the Kidney *qi* and replenish the Kidney essence. Herbs for this purpose include *Du Zhong, Bu GuZhi, Yi ZhiRen, Ba JiTian, Tu Si Zi, Yin Yang Huo, Shu Di Huang, Shan Zhu Yu* and *Gou Qi Zi*. Some of these herbs can be combined with modified *Shen Ling Bai Zhu San* for the future treatment.

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