

# Research on Traditional Chinese Medicine Internal and External Treatment Methods for Pediatric Pneumonia Asthma and Cough

Qixin Cui, Aimin Feng\*

Affiliated Hospital of Shaanxi University of Chinese Medicine, Xianyang 712000, Shaanxi, China

\*Correspondence Author

**Abstract:** *Pneumonia, asthma and cough is one of the common lung diseases in children. Western medicine treats children's pneumonia mostly through hormone or irrational dialectical use of traditional Chinese patent medicines and simple preparations or combination of traditional and western medicine to treat children's pneumonia. A large amount of hormone treatment damages children's spleen and stomach, and clinical research on the etiology of children's pneumonia is still relatively insufficient. At present, it has been proven in a large number of clinical trials that rational dialectical medication and traditional Chinese medicine external treatment have good therapeutic effects on the treatment of pediatric pneumonia, bringing new ideas and methods for the etiology and treatment of pneumonia wheezing.*

**Keywords:** Huangdi Neijing, Pneumonia and wheezing, Diagnosis and treatment based on syndrome differentiation, Children, Relevance, Traditional Chinese Medicine therapy.

## 1. Investigating the Name of the Disease

The name “pneumonia wheezing and cough” first appeared in Xie Yuqiong's “Complete Book of Life in the Department of Anesthesiology” during the Qing Dynasty. When describing the symptoms of measles combined with pneumonia, if there is “wheezing but no tears, accompanied by nasal irritation”, it is called “pneumonia wheezing and cough”, and it is pointed out that its pathogenesis is “caused by multiple factors such as unclear lung heat” [1]. It is a common and frequently occurring disease in children, characterized by fever, cough, phlegm obstruction, shortness of breath, and nasal irritation, which is equivalent to modern medicine's pneumonia in children [2,3]. The incidence of pneumonia wheezing and cough is more common in children, and the younger the age of onset, the more severe the disease. Related studies have shown that traditional Chinese medicine has good therapeutic effects on pneumonia, wheezing, and cough. In clinical practice, it has been found that the efficacy of Western and traditional Chinese medicine treatments is mainly based on anti infection or symptomatic treatment, while traditional Chinese medicine treatment is based on the physiological characteristics of young children's yin and yang, as well as the characteristics of strong stomach and weak spleen. Due to the common deficiency of the spleen in children, a large amount of antibiotics are used to treat pneumonia induced damage to the spleen and stomach, which affects the subsequent growth and development of children. Therefore, traditional Chinese medicine pays more attention to caring for the spleen and stomach and seeking treatment based on the development and evolution of the disease. In treatment, the focus is on eliminating evil, strengthening the body, and even combining attack and supplement. The role of traditional Chinese medicine external treatment in treating pediatric pneumonia wheezing cannot be ignored, but further exploration is needed on the etiology and pathogenesis of pediatric pneumonia wheezing. This article is based on the “pure yang” body of children and the physiological characteristics of childhood yin and yang to discuss the development of pneumonia wheezing,

demonstrate the treatment of childhood pneumonia wheezing, and compare treatment methods.

## 2. Etiology and Pathogenesis

Some literature points out that the pathological factors of pneumonia wheezing are closely related to lung heat [1]. Professor Wang Lie, a renowned traditional Chinese medicine practitioner, believes that pneumonia wheezing belongs to the category of exogenous heat diseases, but cannot be limited to heat pathogens alone. It is also important to pay attention to the role of toxic pathogens, emphasizing that heat is caused by toxicity, is non-toxic and does not cause fever, and that prolonged heat stagnation can become toxic. He also believes that “heat toxicity” is the cause of pneumonia wheezing. Wang Shouchuan et al. [4] believed that the main cause of pediatric pneumonia is the invasion of wind and temperature on the lungs, and its pathogenesis revolves around the mutual influence and transformation of heat, depression, phlegm, and blood stasis. Evil heat inherits yin, lung qi is depressed and blocked, and phlegm and blood stasis are also present, that is, heat depression, phlegm and blood stasis are the key to the pathogenesis. Liu Qiansheng et al. [5] summarized the pathogenesis of this disease and believed that it is caused by external pathogens attacking the lungs, leading to the stagnation of lung qi and the generation of heat, burning of fluid and phlegm, obstruction of lung collaterals by phlegm, obstruction of qi and blood circulation, and internal stagnation of blood stasis. Qi stagnation, blood stasis, and phlegm turbidity interact to form a vicious cycle in the pathological mechanism, which exacerbates or prolongs the condition. Zhang Qingyu [6] systematically summarized the pathological mechanism of this disease, which is characterized by pathogenic heat invading the lungs, accumulation of fluid into phlegm, obstruction of airway by phlegm, and loss of lung function. According to relevant literature [7], the causes of pneumonia wheezing can be divided into two categories: internal and external factors. External factors are attributed to the lack of solid barriers and

the invasion of lung health; Traditional Chinese medicine believes that children with insufficient Qi and delicate organs have insufficient ability to resist external pathogens. If they are not properly nourished and have an imbalance in cold and temperature, they are prone to feeling external pathogens. The lungs control the body's qi, and if the qi is regulated smoothly, external pathogens cannot invade. If the lung qi is lost, it cannot reach the whole body's qi smoothly, and the opening and closing of the pores is lost, the ability to resist external pathogens decreases. Also, because children are a "pure yang body", they are prone to developing from cold to heat, which can lead to pneumonia and wheezing. Symptoms such as fever, cough, sputum, nasal fan, and asthma can be seen in children. External pathogens can be divided into pathogenic factors of epidemic and disease or pathogenic factors of six kinds, among which pathogenic factors of wind are the most common. As stated in "Su Wen · Feng Lun": "Wind is the root cause of all diseases." Wind is the main external factor that causes pneumonia, wheezing, and cough. Wind pathogens invade the skin's pores and cause abnormal opening and closing, indicating chills. Wind pathogens often mix with cold or heat during invasion, with slight sweating during wind heat invasion and no sweating during wind cold invasion. Wind pathogens attack the head and face, blocking meridians and causing facial pain and headache; Wind evil invades the body, whether it invades the skin, muscle surface, or head and face. When it enters, it first invades the lung and respiratory system, causing the imbalance of lung qi circulation and fluid circulation, leading to the accumulation of phlegm and obstruction of the airway. Symptoms such as phlegm wheezing, wheezing, and shortness of breath may occur due to lung qi stagnation. The lungs control the qi of the body. If there is abnormal movement of the qi, it can lead to lung qi stagnation and prolonged stagnation leading to heat; The Origin and Symptoms of Various Diseases "states:" The lungs control the qi, and when evil is present in the lungs, the lungs become swollen. If the lungs become swollen, the lung ducts become unfavorable, and if the airways become congested, the qi becomes wheezing and the breathing becomes blocked". The "Fifty fourth Question on Cold, Cough, and Cold Diseases in Infants and Children" [8] states:" Children feel wind and cold, which affects the skin and enters the lung meridian, causing slight coughing and severe wheezing. When the lungs are injured in cold, they cough and salivate excessively, and the throat makes a rapid sound [9]. When the lungs are injured in warm, the coughing sound becomes blocked and blocked. When the lungs are injured in cold, the cold pathogenic factors must be dispersed. When the lungs are injured in warm, the yang qi will be released and blocked. Depression, some children may experience symptoms such as persistent fever, hypothermia of hands and feet, lack of sweat, and red tongue; If the toxic heat is intense, causing the lung yin to be burned, the liquid cannot be carried up, and the pathogenic heat fumigates and clears the orifices, the child's nasal cavity will be dry, the nostrils will be like coal, and they will cry without tears; Heat induced fumigation torments Yin blood, causing blood to become viscous, slow in circulation, and stagnant in the veins. In severe cases, heat induced excessive blood flow can lead to blood stasis, and the child may experience symptoms such as coughing, wheezing, and even cyanosis of the lips and fingers; Long term pneumonia can lead to deficiency of positive qi and lingering pathogenic heat, resulting in symptoms such as low fever, dry cough, and

insufficient phlegm during coughing and wheezing. The internal responsibility lies in the frequent deficiency of the lungs and spleen, as well as the accumulation of phlegm and dampness. Due to the physiological characteristics of strong stomach and weak spleen in children, the spleen and stomach are often insufficient, and external pathogens invade the body. Due to the delicate nature of the lungs in children, it leads to the first attack on lung health, abnormal promotion and reduction of lung qi, and abnormal water metabolism. In addition, due to the physiological characteristics of frequent spleen deficiency in children, it exacerbates the abnormal transportation of water, leading to phlegm, blocking the flow of qi and blood, and turning into fire over time, which can easily cause pneumonia and wheezing. Due to the physiological characteristics of children being a "pure yang body" and often lacking in spleen, their ability to transport and nourish water, grain, essence, and organs is not yet mature, and their ability to resist external pathogens is insufficient, making them susceptible to invasion by external pathogens. The physiological characteristics of children with "spleen deficiency", combined with irregular diet and excessive consumption of fat and ointment, can damage the spleen and stomach. The water in the middle burner cannot be transported and metabolized, and if trapped in the spleen, it is easy to produce dampness and accumulate into phlegm. The "Treatise on the Origins of Various Diseases" records that "phlegm accumulates but does not dissipate when drinking water, thus forming phlegm." The spleen is the source of phlegm production, and the lungs are the storage vessels for phlegm. Phlegm is turbid and cannot be dissolved, and lung qi circulation and descent are abnormal. Lung qi is reversed, and pneumonia and wheezing are easily seen.

### **3. Traditional Chinese Medicine Treatment for Pneumonia, Asthma, and Cough**

#### **3.1 Diagnosis and Treatment Based on Evidence**

Professor Li Xinmin roughly divided the course of pneumonia wheezing into three stages: fever stage, cough stage, and recovery stage, and treated them in stages [9]. Some studies suggest that pediatric pneumonia is mostly characterized by solid heat syndrome, with wind heat closed lung syndrome and phlegm heat closed lung syndrome being the most common in the early and middle stages of the disease [10]. The treatment of pneumonia, wheezing, and cough should be divided into symptoms and excess symptoms. The main treatment for excess symptoms is symptomatic, and the basic principle for treatment is to promote lung opening and closing, reduce phlegm and relieve asthma. Promoting lung function is to restore lung qi and promote the function of purging and descending. If phlegm and saliva are excessive, the main treatment should be to reduce qi and clear phlegm; The methods of clearing heat and detoxifying, promoting lung function and regulating qi, promoting blood circulation and removing blood stasis, nourishing yin and clearing heat, and supporting the body and eliminating evil are commonly used in clinical practice; If there is a surge of evil or a love between positive and negative factors, the former should focus on strengthening the body to drive away evil, while the latter should prioritize strengthening the body to drive away evil as a supplement. Some doctors believe that different formulas and medicines are used in different stages of pneumonia

wheezing. Among them, Wang Xiao [11] used Maxing Shigan Tang and Yinqiao San to treat children with wind heat closed lung syndrome. Wang Fang et al. [12] found that blood stasis runs through the entire pathological process of pneumonia wheezing, and blood activating and stasis resolving drugs should be used as appropriate during the development of the disease. The syndrome types of pneumonia with wheezing and coughing can cause different symptoms due to different pathogenic factors. The invasion of external pathogenic factors is mainly caused by wind pathogenic factors. As wind is the root of all diseases, it is easy to attack the yang position. Wind pathogenic factors often have a combination of cold and heat, with cold causing wind cold to close the lungs and heat causing wind heat to close the lungs. The formula for wind cold to close the lungs is Huagai San plus minus, and the formula for wind heat to close the lungs is Yinqiao San combined with Ma Huang Yang Gan Cao gypsum soup with modifications; The Warm Heat Theory states: "When warm evil is transmitted upwards, it follows the Yangming meridian of the Sichuan River and spreads backwards to the pericardium." This refers to the fact that warm evil enters through the mouth and nose, and first spreads symptoms of the lung meridian. If the evil is not eliminated in time, it can also spread through the Yangming meridian. In addition to the symptoms of the lung meridian, symptoms of the Yangming meridian can also be seen. If the evil qi is excessive and the positive qi is deficient, it does not follow the meridian and spreads backwards to the pericardium, resulting in symptoms of evil trapping in Jueyin or heart yang deficiency. Among them, the formula for evil trapping in Jueyin should be modified with Lingjiao Gouteng Decoction and Niu Huang Qingxin Pill; The use of Shen Fu Long Mu Jiu Ni Tang with modifications for the syndrome of heart yang deficiency and decline; The invasion of external pathogens leads to abnormal lung promotion and descending, as well as physiological characteristics of spleen deficiency or improper maintenance of spleen and stomach, resulting in spleen deficiency. This leads to abnormal transportation and distribution of water, dampness, and phlegm, which can turn into heat over time. This can be seen as phlegm heat closing the lungs syndrome. Therefore, the combination of Wuhu Tang and Tingpi Dazao Xiefei Tang should be modified; Unable to understand the heat, Yu Jiucheng developed a syndrome of toxin heat closing the lungs, and the prescription was modified with Huanglian Jiedu Tang and Mahuang Almond Licorice Gypsum Decoction; Excessive heat and evil can easily deplete body fluids, or excessive use of heat clearing and detoxifying drugs can cause yin damage and lead to yin deficiency. When yin deficiency and lung heat occur, Sha Shen Mai Dong Tang should be modified; Children have a body of juvenile yin and yang, and their condition develops rapidly. Medical professionals misuse and misuse drugs to damage the spleen and stomach. Children's lungs often lack the ability to resist external pathogens, leading to invasion and dysfunction of lung qi circulation and drainage. Water and fluid distribution are also disrupted, resulting in the formation of phlegm. The "Treatise on the Origins of Various Diseases" records that "phlegm accumulates in drinking water but does not dissipate, thus forming phlegm." The lungs are the storage vessels for phlegm, with phlegm turbidity blocking and lung qi reversing, leading to coughing and phlegm production; The spleen is often insufficient, which is one of the physiological characteristics of children. Improper feeding and improper

diet can easily damage the spleen and stomach, and the spleen and stomach are unable to transport water. "Deficiency of lung and spleen, deficiency of vital qi and excess of pathogenic qi, and inability to expel pathogenic qi go out, so the deficiency of lung and spleen syndrome is treated with ginseng and schisandra decoction. Traditional Chinese medicine and western medicine have different treatment methods for children's pneumonia. Western medicine treats children's pneumonia mostly with antibiotics, of which the abuse of antibiotics damages children's spleen and stomach, and even does not dialectically use a variety of traditional Chinese patent medicines and simple preparations or unreasonable combination of traditional and western medicine to cause spleen and stomach injury. Traditional Chinese medicine always adheres to the treatment based on syndrome differentiation and the overall concept to treat diseases, and follows the treatment principle of seeking the root of disease. Traditional Chinese medicine is particularly effective in treating children's pneumonia with asthma, flexibly use the syndrome differentiation of zang fu organs, the ascending and descending movement of qi, and follow the principle of" following yin and yang, harmonizing with counting " Theoretical treatment for pneumonia wheezing has unique advantages; Traditional Chinese Medicine (TCM) treatment for pneumonia, wheezing, and cough achieves ideal therapeutic effects by identifying the syndrome type and selecting appropriate medication based on syndrome differentiation.

### 3.2 External Treatment Therapy

The advantages of external treatment methods are direct action, minimal adverse reactions, and easy acceptance by pediatric patients. They are particularly suitable for children who have difficulty taking medication or have poor oral medication treatment. They are often used in conjunction with internal treatment methods to improve efficacy. At present, commonly used external treatment methods in clinical practice include medication acupoint application, massage and cupping, etc

#### 3.2.1 Acupoint application of traditional Chinese medicine

Acupoint application is one of the common external treatment methods for treating pediatric pneumonia. According to the different symptoms of the child, the corresponding efficacy of the application preparation is selected, and the medication is applied to the treatment acupoint. The medication is in long-term contact with the skin, enters the bloodstream through the skin barrier, and is stimulated by acupoint stimulation to exert therapeutic effects, accelerate the absorption of rales in the child's lungs, and relieve symptoms such as cough and shortness of breath. From the perspective of traditional Chinese medicine, the application therapy has the value of balancing the yin and yang of the organs, regulating qi and blood, and can exert an overall effect. For children, their skin is more delicate, so applying medication directly to the surface of their skin can help improve the permeability of the medication, making it easier for the medication to penetrate the skin and reach the disease site, thus exerting corresponding therapeutic effects [13]. Zhuang Lingling et al. [14] showed that the combination of traditional Chinese medicine application and Western medicine

treatment is more effective than pure Western medicine treatment.

### 3.2.2 Cupping therapy for the treatment of pneumonia, wheezing, and cough

Cupping therapy uses a tank as a tool to generate negative pressure through methods such as burning fire and extracting air, which is adsorbed onto the corresponding area. It has the advantages of promoting meridian circulation, activating collaterals, dispelling wind and dispelling cold, and is one of the common techniques in clinical TCM external treatment. Modern medical research has confirmed that cupping therapy is applied in the treatment of pneumonia asthma, cough, and cough. With the help of negative pressure principle, it dilates local capillaries, rapidly congestion capillaries in a short period of time, accelerates metabolism, and makes the body feel warm, which helps to further enhance the clinical treatment effect of children [15]. Yuan Lin et al. [16] divided children with bronchopneumonia into two groups using a random number table method. The observation group received conventional Western medicine treatment combined with cupping therapy, while the control group received conventional Western medicine treatment. The results showed that the observation group had significantly better therapeutic effects than the control group.

### 3.2.3 Pediatric Tuina

Pediatric Tuina is a traditional Chinese medicine external treatment method that is guided by the basic theory of traditional Chinese medicine, based on the physiological and pathological characteristics of children, uses manual techniques to act on corresponding parts and acupoints of children, and utilizes the conduction effect of meridians to mobilize the fine substances such as qi, blood, and body fluids of children to strengthen the connection between them and the five organs and six viscera, in order to prevent and treat pediatric diseases, promote the growth and development of children, and promote their physical and mental health [17]. Jin Chaoqin et al. [18] divided the children into two groups using the odd even number method, with 40 cases in each group. The control group received conventional Western medicine treatment, while the study group received a combination of conventional Western medicine treatment and pediatric massage. The results showed that the total effective rate of the study treatment was higher than that of the control group, and symptoms such as cough and wheezing in the children were significantly relieved.

### 3.2.4 Traditional Chinese Medicine Enema

The method of traditional Chinese medicine enema involves pouring traditional Chinese medicine juice through the anus, retaining it in the rectum or colon, and absorbing it through the intestinal mucosa to achieve an external treatment for diseases. Traditional Chinese medicine believes that the lungs and large intestine are interconnected, and drugs are absorbed into the bloodstream through the mucosa of the large intestine, thereby exerting a therapeutic effect on lung diseases [19]. Ma Chun [20] et al. demonstrated through meta-analysis that traditional Chinese medicine enema treatment for pediatric pneumonia can shorten the time for clinical symptoms to

disappear, and its efficacy is superior to oral Western medicine or traditional Chinese medicine treatment.

## 4. Summary and Discussion

Traditional Chinese medicine has shown good efficacy in treating pediatric pneumonia, wheezing, and cough. It selects medication based on syndrome differentiation and determines the basic treatment principles, which is different from Western medicine's symptomatic treatment that uses hormone therapy or combination therapy. Traditional Chinese Medicine (TCM) treatment for pediatric pneumonia, wheezing, and cough always adheres to a holistic concept and follows the principle of treating the root cause. During the treatment process, the disease is treated through syndrome differentiation and medication, while also taking care of the child's physical condition, enhancing resistance, and reducing the risk of recurrence. In the internal treatment of pediatric pneumonia and wheezing, although some children have difficulties in feeding medication and coordinating, the use of traditional Chinese medicine internal and external treatment methods to treat pediatric pneumonia and wheezing can effectively alleviate the difficulties faced by Western medicine treatment methods. Due to the fact that children have a body with both yin and yang, and the disease spreads and develops rapidly as they age, in the early stages of treating pneumonia, wheezing, and cough, Western medicine is often used as the main treatment to suppress the development and progression of the disease. Traditional Chinese medicine treatment is supplemented by the use of Western medicine hormones to prevent damage to the spleen and stomach. Therefore, in the treatment of pediatric pneumonia wheezing, especially in the early stage of pneumonia wheezing, the therapeutic effect of Western medicine cannot be ignored.

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