

Research Progress of Chinese Medicine in the Treatment of Pediatric Pneumonia

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Abstract:

Pediatric pneumonia is one of the most common diseases of the pulmonary system during the growth and development period of children, with the highest morbidity and mortality rates. It is characterized by fever, cough, fluttering of the nose, shortness of breath, sputum, and fixed wet rales in the lungs. The treatment of pediatric pneumonia is still a hot spot in clinical research. In this paper, we summarize the research progress of internal and external treatments of traditional Chinese medicine in order to provide ideas for the clinical treatment of pediatric pneumonia.

Keywords:

Pediatric Pneumonia, Traditional Chinese Medicine, Internal Treatment, External Treatment

1. Introduction

Pediatric pneumonia in Chinese medicine belongs to the category of “pneumonia wheezing and coughing” [1] and first appeared in the Qing Dynasty metabolism. Yu Qiong, “Ma Ke Living People Complete Book,” [2] is a common disease in pediatrics as well as a frequent disease. It is a fever, cough, shortness of breath, nasal fan, and sputum as the main clinical manifestations of the pulmonary system diseases. Spring, summer, autumn, and winter can cause the disease, and winter and spring are the high seasons. In recent years, with the gradual improvement of people's living standards, to a greater extent, the conditions of child rearing have improved, and acquired feeding is too fine, in addition to Western medicine, antibiotics, and various immunosuppressive measures. In recent years, with the gradual improvement of the people's living standard and a greater degree of raising the child's upbringing conditions, the acquired feeding is too fine. In addition to Western medicine, antibiotics, hormones, and a variety of immune preparations for the use of drugs resulting in drug resistance and adverse reactions, the greater the degree to which the child's growth and development and physical and mental health are affected to a certain extent. Chinese medicine, as a traditional medicine in China, has always been characterized by good safety and easy acceptance. As the state attaches importance to the research of Chinese medicine, more and more Chinese medicine scholars are

devoted to the research of Chinese medicine. Many studies have proved that the treatment of pediatric pneumonia with Chinese medicine has obvious efficacy and advantages and has gradually become the main treatment mode of pediatric pneumonia. [3] Now, the Chinese medicine treatment of pediatric pneumonia is categorized and analyzed as follows.

2. Etiology and Mechanism of Disease

Chinese medicine believes that the etiology of pneumonia and wheezing covers both external and internal causes, with the feeling of wind as the external cause, or from other different diseases; the internal cause is that the child's "form and qi is not yet full, and the internal organs are delicate." [4] Because of the susceptibility to external attack, the lungs lose the declination and purging and develop into pneumonia and coughing. Bo Yao et al. Discussed [5] the etiology of pediatric pneumonia and cough from the five movements and six qi, attributing it to the fact that too much or too little of the yearly movement will affect the corresponding internal organs, resulting in the occurrence of the disease. The key to the disease mechanism lies in the depression and closure of lung qi. Huifu Xu [6] suggested that pediatric mycoplasma pneumonia belongs to the category of "warm disease"; the key mechanism is the wind and warm invasion of the body and toxic heat blockage. Western medicine believes that this disease is caused by different pathogens or other different factors; bacteria and viruses are the main pathogenic microorganisms. The physiological characteristics of children are relatively special, mainly manifested in the deficiency of positive qi and low resistance to external evils, which can easily lead to the entry of germs into the lung tissues, inducing pneumonia.

3. Traditional Chinese Medicine Internal Treatment

3.1. Lung-cleansing method

Bing Li et al. [7] observed the clinical efficacy of 60 cases of children with wind-heat and lung-type asthma and randomly grouped them into groups: the treatment group was given Qinglong Drink (the main components of which are forsythia, scutellariae barbellatae, radix et rhizoma, and camellia sinensis), which is the main treatment for clearing away heat and removing toxins and promoting the lungs to resolve phlegm, and the control group was treated with Makgantu Shikang Tang, which is the main treatment for children with wind-heat and lung-type asthma. The results showed that the use of Qinglong Drink was more effective in treating children with wind-heat and lung-type pneumonia with wheezing and could effectively improve the symptoms and signs of the children. Bin Chen [8] took 60 children as observation subjects, and the results showed that the treatment effect of the treatment group was better than that of the control group in terms of various clinical symptoms, such as cough, fever, and runny nose. Therefore, it is believed that phlegm and heat have an obvious role in this case, and children are mostly positive physique, easy to be caused by the six evils, external evils from the outside to the inside, and heat closed in the lungs. The lungs can't be cleared and purged and can't make the qi go up and down, so it should be through clearing the lungs, stopping the cough, and resolving phlegm, etc., to achieve the restoration of the lungs to restore the normal function of the lungs and to play a role in the treatment.

3.2. Yin nourishment

Yuan Xu [9] included 55 children with chronic cough after pediatric mycoplasma pneumonia as observation subjects. The total effective rate of treatment in the single-drug group was significantly lower than that in the combination group, and the TCM evidence points were higher than that in the combination group. The effect of applying montelukast combined with nourishing Yin and clearing lung soup to children with chronic cough after mycoplasma pneumonia is remarkable. Yu Bi et al. [10] included 70 cases of pediatric pneumonia with Yin deficiency and internal heat syndrome as research subjects, and all the children were treated with Nourishing Yin and Clearing Lung Soup, which is composed of Radix Rehmanniae Praeparata, Maitong, Radix Glycyrrhizae Praeparatae, Radix et Rhizoma Glycyrrhizae, Radix et Rhizoma Ginseng, Radix et Rhizoma Dampiae, Mentha piperita, Fructus Piperitiae, and Radix et Rhizoma Alba Lactiflorae. The effect of using Nourishing Yin and Clearing Lung Soup in treating the Yin deficiency and internal heat syndrome of pediatric pneumonia and wheezing was significantly improved. The Su Wen - Bao Life Full Form Theory says, "Life has a form and is not separated from yin and yang." So in the process of treating pediatric pneumonia, timely nourishment of yin is also a very important part.

3.3. Tonic spleen method

Xiangyu Hu et al. Experimentally [11] randomized 234 cases of pediatric pneumonia with wheezing and coughing into a control group, a treatment group, and a blank group, and the results obtained showed that the final treatment results of the treatment group were more significantly improved than the treatment results of the control group. Fei Xia et al. Believe [12] that in the clinical treatment of pediatric pneumonia and cough, the cool and moist PeiTuShengJin method can be added through the addition of the YiQiSpleen class of traditional Chinese medicine, prompting the restoration of the spleen qi to transport the water and grain essence to the nutrient viscera. The qi can be healthy, and fluid can be transported to the lungs, while the nourishing YinShengJin class of drugs can nourish the stomach yin to produce fluid. The stomach yin can be restored to promote the normalization of the biochemistry of the yin and essence, and the lung yin can be restored, promoting the restoration of lung function. This can promote the normalization of yin-essence biochemistry and the recovery of lung yin and promote the recovery of lung function. The spleen and stomach are the foundation of later life. In the theory of the five elements, the lung is gold, the spleen is earth, earth produces gold, and the spleen is the mother of the lungs. When the lungs feel the external evil, the spleen is also susceptible to being affected. Therefore, in the treatment of pneumonia and coughing, taking care of the spleen and stomach can enhance the therapeutic effect.

3.4. Method of removing blood stasis

Yu Peng [13] believes that the treatment of "activating blood circulation" to prevent pediatric pneumonia from changing from normal evidence to variable evidence, the lung network is the pathway for the operation of qi and blood, the lung network is also the pathway for the invasion of disease and evil to attack the body, and the lung network is the pathway to get rid of the evil out of the body. The blood stasis needs to be passed as the outline, the lung qi is to be declared as the key, and the treatment of blood circulation can regulate the qi and blood circulation, resolve the blood stasis, and pass the collaterals. When gas is regulated, blood will flow, and blood stasis will be eliminated. When gas and blood flow is smooth, the circulation of gas and blood in

the lungs will also be improved, which will promote the recovery of lung function and improve the normal operation of gas exchange and fluid transmission, so that when the evil is gone, the positive will be at peace, and the cough and wheezing can be calmed down, then the disease can be recovered. Therefore, blood circulation therapy in pediatric pneumonia cough is also an important part of the indispensable treatment. Shizhe Shan et al. from [14] the six depression theory of pediatric pneumonia stasis, often because of the disease, each other, intertwined, interlaced, and complex, resulting in the production of “stasis,” should recognize that stasis occurs before the occurrence of the disease, that is, in the disease before the occurrence of the state of the blood, which already exists because of the six depressions caused by stagnation of the blood. Before the disease occurs, timely treatment of disease development should be given to intervene in advance. We should intervene in the development of the disease before the disease occurs, seize the main mechanism of the disease for diagnosis and treatment, and treat “stasis” from “depression” to move qi and promote the operation of qi and blood, and at the same time, we should pay attention to treating the symptoms and the root cause of the disease at the same time and advocate treating the root cause of the disease from “stasis.” At the same time, attention should be paid to treating both the symptoms and the root cause at the same time, advocating the treatment of the disease from the perspective of “stasis,” and always obtaining satisfactory results. Shouchuan Wang believes [15] that lung qi declares and sends out and cleanses, and qi closes the collaterals, resulting in blood congestion and stasis. Treatment should be to activate the blood and clear the collaterals and to resolve the stasis and eliminate the stagnation of blood as the basic treatment method.

4. External Treatments

4.1. *Tui Na therapy*

Lingfan Chen et al. Observed [16] the efficacy of Liu's pediatric massage in treating children with pneumonia and wheezing. The treatment group selected 203 cases of children with pneumonia and wheezing and treated them with Liu's pediatric tuina (the selected techniques mainly include opening the door of heaven, rubbing the sun, pushing the kangong, pushing the five meridians, etc.), while the control group selected 198 cases of children with pneumonia and treated them with conventional oral medication, and the results showed that the therapeutic effect of the treatment group had a significant improvement compared with that of the control group. Pediatric massage has an obvious effect on the process of pediatric pneumonia treatment. Pindong Liao [17] used pediatric Tui Na to treat pediatric pneumonia, and the children and their families were more likely to accept pediatric Tui Na treatment, which also served to improve the immunity of the children and regulate the balance of yin and yang in the children. With the development of pediatric massage, more and more people accept pediatric massage therapy, and pediatric massage has gradually become a treatment method that cannot be ignored in the treatment of pediatric pneumonia in Chinese medicine.

4.2. *Patch therapy*

Cuihong Wang [18] included 70 cases of children with bronchopneumonia in the observation, according to the randomized group, using nebulized inhalation to treat the control group and the treatment group in the control group on the basis of the joint use of traditional Chinese medicine acupoint patch therapy. The clinical efficacy,

length of hospitalization, symptom disappearance time, and adverse reactions of the two groups were compared. The results suggest that the treatment group has obvious advantages over the control group. For this kind of child, the combined treatment of traditional Chinese medicine nebulized inhalation and acupoint paste can effectively promote the recovery of patients' conditions, and the therapeutic effect is more ideal. Guoyan He et al.[19] randomly grouped 100 children with pneumonia, wheezing, and coughing, and the results showed that the therapeutic effect of the treatment group was significantly higher than that of the control group, and in order to promote the improvement of Chinese medicine symptoms, it is worthy of further promotion in the clinic. Yujue Wang [20] took 70 cases of children with pneumonia as the object of observation, and according to the randomized grouping method, the control group was given the conventional treatment method of Western medicine, and the control group was given the combination of phlegm-reducing and cough suppressing medicine and Chinese medicine acupoint compresses (the main components of the Chinese medicine compresses are white mustard, perilla seeds, and lycopodium seeds), and the above medicines were grinded into powder and made into the treatment group by using honey and fresh ginger, which showed that the treatment group was significantly better than the control group in terms of improving the clinical symptoms of the affected children. The results showed that the treatment group was significantly better than the control group in improving the clinical symptoms of the children, which fully proved that the traditional Chinese medicine acupressure treatment method has obvious efficacy in the treatment of pediatric pneumonia.

4.3. Cupping therapy

Yuxiu Jiang [21] included 50 cases of children with pneumonia and wheezing and coughing with wind-heat and lung closure into the observation object, according to the randomized grouping, the control group was given the conventional treatment of Western medicine, and the treatment group was combined with the meridian flash cupping method on the basis of the control group, and the cupping was mainly selected from the large vertebrae point, the fixed wheezing point, the Fengmen point, the Lung Yu point, the diaphragm point, the Spleen Yu point, and the bottom of the lungs (the Ahshi point), and so on, and the results showed that the improvement of the clinical symptoms of the children in the treatment group was significantly better than the control group, and cupping therapy had no drug toxic side effects and the advantages of low cost. The results showed that the clinical symptoms of children in the treatment group improved significantly better than those in the control group, and cupping therapy, which has no toxic side effects of drugs and has the advantage of low cost, has certain advantages in the treatment of pediatric pneumonia and wheezing. Peipei Zhang [22] took 60 cases of children with pneumonia and cough as observation objects, according to the randomized grouping, the control group was given different anti-infective drugs according to the condition, and the treatment group was given adjunctive treatment of cupping (the main method is flash fire method, the can was first plucked on one side of the position of the lung point, pushed and pulled down along the dorsal acupoints as well as the bladder meridian, and pushed and pulled to the splenic acupoints of the same side, and then pushed and pulled to the spleen point and lung acupoint of the other side), and then pushed and pulled to the other side of the spleen point and lung acupoint. The results showed that the clinical symptoms of the treatment group improved significantly better than those of the control group. Cupping therapy has the effect of regulating yin and yang, nourishing the internal organs, relaxing the tendons and activating the collaterals, and

two-way regulation. After cupping, the inside of the can is usually filled with water vapor, and blisters may appear if there is serious dampness in the body. In addition, the blood color of the spot is also a more obvious phenomenon. Modern medicine believes that the suction force generated by negative pressure during cupping can suck out the moisture in the body, which can also lead to capillary rupture. It is more suitable for the treatment of pediatric pneumonia and promotes the rapid recovery from the disease.

4.4. Enema therapy

Yalei Wang et al. [23] took 90 cases of children with pneumonia as the object of observational study; the control group was given Western medicine symptomatic treatment, and the treatment group added Huagai San Decoction enema treatment on the basis of the control group and the prescription of Huagai San Decoction (Ephedra, Perilla frutescens, Bitter almonds, Pericarpium chendi, Sangbaipi, Poria, and Glycyrrhiza glabra). The results suggested that the treatment group had a higher effect on the promotion of the disappearance of cough, the return of body temperature to normal, the disappearance of lung rales, and other clinical symptoms than the control group. Yanping Wang took [24] children with the phlegm-heat lung closure type as the research object. The control group was given the conventional western medicine symptomatic treatment, and the randomized group, the treatment group, was given the treatment on the basis of the control group combined with the enema of Jiawei Wuhu Tang plus and minus, the Jiawei Wuhu Tang prescription (gypsum, Sangbai Pi, Gua Pouden, Sheng Huangqin, Zhaosu Ephedra, Bitter Almonds, and Sheng Gan Cao). The results indicated that the effect of the treatment group was significantly greater than that of the control group. Chinese herbal enemas are directly instilled into the rectum to provide a systemic medication effect. Chinese medicine enemas are a relatively simple and non-invasive treatment method, which is not a bad choice when it is difficult for children to take oral medication and intravenous fluids. Chinese medicine enemas are in line with the traditional Chinese medicine point of view; the medicine will be given through the rectum and has the advantages of fast absorption, small gastrointestinal stimulation, good compliance, and so on. Also, it [25] can make the five-tiger soup plus reduction formula in the treatment of pediatric pneumonia to provide a better therapeutic effect.

5. Conclusions

In recent years, the incidence of pediatric pneumonia has been increasing year by year due to the influence of life, diet, work and rest, and the environment. As well, due to the abuse of antibiotics, the drug resistance rate has increased significantly, and Western medicine is lacking in the treatment of the disease. With people's attention to pediatric pneumonia, more and more Chinese medicine scholars are committed to the study of this disease. With the continuous deepening of the study, the Chinese medicine treatment of pediatric pneumonia is also becoming more and more perfect. The Chinese medicine treatment point of view is the overall concept and identification of evidence-based treatment, and at the same time, it takes into account the long-term efficacy of the aspects of the disease and is worth further promoting the use of the clinic. However, there are some shortcomings, including the bitter taste of traditional Chinese medicine, the long duration of treatment, and the immature research on the mechanism of action of drugs. Therefore, it is necessary to strengthen the research on the mechanism of the drug and combine it with modern medical experiments.

Research and development of pharmaceutical agents suitable for pediatric tastes as a research direction. Promote the development of Chinese medicine to modernization in order to continuously improve the physical and mental health of our children.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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