



Integrating Traditional Chinese and Western Medicine to Treat Childhood Asthma

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Abstract: Asthma is a common chronic airway disease in children. Clinically, recurrent wheezing, shortness of breath, chest tightness and cough are the main symptoms, which often attack or aggravate at night and/ or in the early morning. At present, the prevalence of childhood asthma is on the rise, which seriously affects the physical and mental health and growth of children. Childhood asthma belongs to the categories of "wheezing", "asthma", "cough variant asthma" and so on. Asthma is mostly related to the dysfunction of lung, liver, spleen and kidney, so attention should be paid to the treatment of lung, liver, spleen, and kidney. According to the clinical symptoms and TCM syndrome differentiation, children's asthma is cold, heat, deficiency and reality. The main treatment principle is to warm the lung to reduce watery phlegm, relieve asthma and clear the lung. Among them, warm lung drinking includes three aspects: warming lung and dispersing cold, promoting lung function and relieving cough, resolving phlegm and relieving asthma.

Key words: asthma; integrated traditional Chinese and western medicine; childhood asthma

1. Introduction

Bronchial asthma (abbreviated as asthma) is a common chronic airway inflammatory disease in childhood, which involves a variety of cells and their products in the airway inflammation process. It is characterized by extensive and changeable airway inflammation and airway high reactivity, and is characterized by repeated episodes of wheezing, shortness of breath, chest tightness and cough symptoms, which often intensifies at night and/or in the morning. Asthma is one of the most common diseases in childhood, occurring in about 10% to 30% of children, and its prevalence gradually increases with age. At present, there is no specific treatment method in western medicine, mainly to relieve the symptoms and provide symptomatic treatment. Children with asthma have a long course of disease, and repeated attacks and delay have a great impact on the growth and development of children, and some children will have psychological problems such as depression. With the research of traditional Chinese medicine in the field of children with asthma in recent years, especially the application of oral traditional Chinese medicine decoction, atomization inhalation and the combination of traditional Chinese and western medicine treatment, it can not only significantly improve children with lung function, bronchodilation and other clinical symptoms and signs, but also improve children with sleep quality, reduce symptoms such as shortness of breath and breathing difficulties. Therefore, the combination of traditional Chinese medicine treatment

with modern medicine can better improve the clinical symptoms of children. In this paper, the etiology and pathogenesis of pediatric asthma were analyzed and the treatment with integrated Chinese and western medicine was discussed.

2. Traditional Chinese Medicine Treatment

According to traditional Chinese medicine, the pathogenesis of childhood asthma is deficiency in origin and excess in superficiality, that is, the dysfunction of lung, spleen, and kidney, leading to syndrome types of dysfunction of the lungs, spleen, and kidneys. The key to the pathogenesis is airway hyperresponsiveness, dysfunction of lung, spleen and kidney, functional activity of qi being not smooth, phlegm turbidity and internal accumulation, invading lung and stomach, phlegm heat obstruction; or induced by external evil. The basic pathogenesis of asthma is lung qi deficiency, with wind, phlegm and blood stasis as the afflicting factors; and the pathological mechanism is airway spasm and airway stenosis.

Asthma belongs to the category of "asthma syndrome" in traditional Chinese medicine. The main treatment is to replenish qi and tonify kidney, remove phlegm blood stasis, clear lung and relieve asthma. For children with recurrent attacks, traditional Chinese medicine advocates the combination of disease differentiation and syndrome differentiation, with the addition and subtraction of the syndrome. The commonly used prescriptions are Yupingfeng San (composition: astragalus membranaceus, atracylodes macrocephala, saposchnikovia divaricata, etc.) and Buyang huanwu decoction (composition: astragalus membranaceus, codonopsis pilosula, atracylodes macrocephala, etc.).

Fang Yi: Astragalus membranaceus can tonify qi and strengthen exterior, atracylodes macrocephala can strengthen the spleen and replenish qi; saposchnikovia divaricatag can dispell wind and stop spasms; schisandra chinensis can astringe the lung to stop cough and can promote diuresis and remove dampness.

According to the age of children, the composition of prescription was added or subtracted: 2 years old children, adding with ginseng; 3 to 5 years old children, adding with codonopsis pilosula and atracylodes macrocephala; 6 to 10 years old children, adding with astragalus membranaceus; 11 to 15 years old children, adding with eupatorium and acorus tatarinowii; children over 16 years old, adding with monkshood.

External use of traditional Chinese medicine: children's massage: supplementing the lungs and relieving asthma, promoting spleen circulation and resolving phlegm; tiantu acupoint needling method, clicking the Baihui acupointpoint.

3. Western Medicine Therapy

Western medicine treatment plays a key role in the management of asthma in children, and can be personalized according to the specific situation of children to help control the condition.

(1) Inhaled corticosteroids: This is one of the most effective drugs to control asthma in children. By using once daily, inhaled corticosteroids can reduce asthma symptoms and reduce the number of attacks in a short period of time. This drug helps control asthma by reducing airway inflammation and improving airflow.

(2) Short-acting β 2 receptor agonists: This class of drugs is quick and long-acting. They treat asthma by dilating bronchial smooth muscle, reducing airway mucosal edema, and reducing airway inflammation. Commonly used drugs include salbutamol and terbutaline.

(3) Anticholinergic drugs: These drugs can reduce airway smooth muscle spasm and relieve bronchospasm. Ipratropium bromide and metoclopramide are commonly used drugs.

(4) Non-hormonal anti-inflammatory drugs: Although these drugs do not completely cure asthma, they can reduce asthma symptoms by blocking the release of inflammatory mediators. Compound aminophylline, ipratropium bromide and isoproterenol are commonly used drugs.

(5) Leukotriene modulators: These drugs can relieve asthma symptoms by reducing the concentration of leukotrienes. Montelukast sodium and zalucast are commonly used drugs.

(6) Antihistamines: These drugs can reduce the release of inflammatory mediators, relieve bronchospasm, and reduce asthma symptoms. Loratadine and cetirizine are the commonly used drugs.

(7) Immunomodulatory drugs: These drugs can regulate the immune function and enhance the body's immunity, thus reducing the number of asthma attacks.

4. Traditional Chinese Medicine Characteristic Therapy

TCM therapy has rich experience and unique methods in the treatment of many diseases.

(1) Acupoint application: This is a commonly used traditional Chinese medicine therapy, by applying hot medicine to specific acupoints, to achieve the effect of warming the meridians, resolving phlegm and relieving cough, relieving asthma and removing phlegm. For the treatment of pediatric asthma, according to the constitution and condition of children, it is necessary to choose different Chinese medicines for application, in order to achieve the purpose of treating both the symptoms and the root causes. For example, prescriptions such as "Bufe decoction", "Xuanfei Pingchuan decoction" or "Ephedra asarum soup" can be used. These drugs can be absorbed through the skin and directly act on the acupoints to promote the remission of the disease.

(2) Massage: Massage is a kind of traditional Chinese medicine massage therapy that helps to clear the meridians, reconcile qi and blood, and promote the body metabolism. For children with asthma, the technique of relieving asthma can be used, or acupoint massage can be used to achieve the role of dredging meridians, promoting qi and blood circulation, and harmonizing Yin and Yang. This helps to improve airflow and reduce asthma symptoms.

(3) Acupuncture: Acupuncture is another common therapy in traditional Chinese medicine. According to the clinical symptoms of the children, different acupoints were selected for treatment. For example, acupoints such as Dazhui, Feiyu, and Piyu can be selected to play the role of warming Yang, replenishing deficiency, dredging wind and promoting lung function. In addition, Shenyu and other acupoints can also be used to warm the kidney and regulate the function of viscera. Acupuncture can improve the energy flow in the body and promote the body's self-healing ability.

Traditional Chinese medicine characteristic therapy has unique advantages in the treatment of pediatric asthma, which can be carried out according to the specific situation of children, to achieve the effect of treating both symptoms and root causes.

5. Special Inspection

(1) Lung function examination: For children with suspected asthma, it is recommended to perform routine lung function examination to understand the airway responsiveness and the degree of airway obstruction of the children.

(2) Bronchial challenge test: For the acute attack of asthma, such as bronchospasm before asthma acute onset, typical asthma symptoms, and the symptoms are not obvious or only slight wheezing during the attack, it is recommended to conduct routine bronchial challenge test. Generally, large or moderate inhalation of budesonide or beclomethasone propionate is administered continuously for 3-5 days.

(3) Allergen skin prick test: For children with suspected allergic diseases, it is recommended to conduct routine allergen skin prick test. Generally, a small dose or medium dose of inhaled glucocorticoid and skin prick test are used..

(4) Airway reactivity testing: For children whose airway hyperreactivity is suspected, routine airway reactivity testing is recommended. If asthma is clear, routine inhaled corticosteroids plus skin prick test is recommended.

(5) Chest X-ray film: For children with suspected lung lesions, it is recommended to conduct routine chest X-ray examination to understand the lung lesions. If lung disease is not determined, a routine chest X-ray examination is recommended.

6. Conclusion

Asthma is a common disease and frequently occurring disease in children. The treatment of asthma is a long-term and systematic process. In the treatment of asthma, western medicine mostly uses hormones and anti-inflammatory drugs, but the long-term application of hormones has certain side effects, and will cause hormone dependence. Traditional Chinese medicine mostly uses internal Chinese medicine and external Chinese medicine for a comprehensive treatment. For the treatment of children's asthma, attention should be paid to the comprehensive treatment of traditional Chinese medicine, based on TCM syndrome differentiation, supplemented by western medicine treatment. At the same time, the education and guidance of parents of children should be strengthened, and children should be encouraged to actively cooperate with doctors for treatment. In addition, according to the specific situation of children, western medicine treatment should be selected for combined use by choosing appropriate drugs. Childhood asthma, as a chronic airway inflammatory disease, is characterized by recurrent episodes. Therefore, clinical response should pay attention to childhood asthma, early diagnosis, early treatment, and early control.

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Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

References

- [1] Xiaoyong Wang. 2024. Clinical Observation of Bronchial Asthma in Children. *Bright Traditional Chinese Medicine*, 39(04): 767-770.
- [2] Guanzhen Yang, Ge Yan, Huiting Yuan. 2024. Analysis of the Clinical Effect of Integrated Chinese and Western Medicine for Allergic Asthma in Children. *Journal of Rare Diseases*, 31(02): 2.
- [3] Juan Zhang, Haisha Shi. 2023. Clinical Observation of Pulmonary Fever of Integrated Chinese and Western Medicine. *A Practical Journal of Traditional Chinese Medicine*, 39(03): 490-492.
- [4] Yanli Liu, Xiaojia Liu, Xiaoying Yang, etc. 2022. To Explore the Application Value of Budesonide + Salbutamol and Combined Pulmonary Rehabilitation Training for the Acute Onset of Severe Bronchial Asthma in Children. *Journal of Clinical and Experimental Medicine*, 14: 1545-1548.
- [5] Yan Xiao, Yanyan Su. 2022. Efficacy and Treatment of Lung Function and Serum Cytokine Level Analysis of Ipratropium Bromide and Albuterol In Children with Asthma. *Clinical Studies*, 7: 60-63.
- [6] Yongjun Zhao, Yaoli Jia, Huixia Zhang. 2022. Effect of Salbutamol Combined with Budesonide Aerosol Inhalation on Airway Remodeling and Inflammatory Response in Pediatric Bronchial Asthma. *Journal of Rare Diseases*, 3: 41-43.
- [7] Liang Yi. 2022. Comparison of the Efficacy of Salbutamol Combined with Budesonide and Becomethasone Propionate for Acute Attacks of Bronchial Asthma in Children. *Journal of Clinical Rational Drug Use*, 2: 126-128.

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