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Clinic Effect Study of Bao er Ning Decoction in the Remission Period of Children's Recurrent Respiratory Tract Infection

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ABSTRACT. *Objective: To study and analyze the clinical effect of Bao Er Ning Decoction in the remission period of children's recurrent respiratory tract infection. Methods: 100 children with recurrent respiratory tract infection in remission periodwere randomly selected from Dec 2018 to Dec .2019, which were divided into twogroups: regular group and research group,50 cases in each group. The regular groupwas treated with levamizopine orally, and the research group was treated with Baoerning Decoction. To analyze and compare the overall clinical efficacy, number of infections, and adverse reactions of each group. Results: the overall efficacy of the research group was higher than that of the regular group (P<0.05); the number of infections in the research group was significantly lower than regular group (P<0.05); there was no difference in adverse reactions of the two groups(P > 0.05). Conclusion: Bao Er Ning decoction is more effective for children with recurrent respiratory tract infection in remission period. the number of children with recurrent respiratory tract infection after treatment is significantly reduced, and the safety of Baoerning decoction is high, which is worthy of clinical promotion.*

KEY WORDS: *Bao Er Ning Decoction; children; repeated respiratory tract infection; clinical effect*

1. Introduction

Children with recurrent respiratory tract infection refer to recurrent respiratory tract infection in children within 12 months, and the frequency of infection exceeds the standard range [1]. In clinical practice, recurrent respiratory tract infection is more common in children, most of whom are 2-6 years old, and the incidence of this disease is very high. Symptoms are waxy complexion, anorexia, weight loss, poor sleep quality, lack of energy, excessive sweating, high fever, no vomiting, vomiting, nausea, long-term repeated cough, diarrhea, runny nose, etc. If it is not treated in time, it may cause many serious complications, such as asthma, pharyngitis, viral myocarditis, etc.., which seriously threaten the safety and health of children. Clinically, drugs that enhance immunity are used to treat children with repeated respiratory infections. However, taking such drugs for a long time is easy to produce strong dependence, and may even damage the liver and kidney functions of children. Therefore, it is very important to explore a more effective and safe treatment to improve the prognosis of children. Extensive and profound Chinese medicine has accumulated rich practical experience in the treatment of colds, and its role and effect are more and more favored by clinical pediatrics. 100 children with recurrent respiratory tract infection in remission stage were included from Dec.2018 to Dec. 2019 as the observation objects, this study was focused on the analysis of the therapeutic effect of Bao Er Ning Decoction on children with repeated respiratory infections just for clinical reference.

2. General information and methods

2.1 General Information

The observation subjects of this study were 100 children with recurrent respiratory tract infection in remission stage from Dec. 2018 to Dec.2019. Review and approval by the medical ethics Committee.

Inclusion criteria: The diagnostic criteria of Western medicine are in line with the Clinical Concept and Principles of Management of Recurrent Respiratory Tract Infection (Revised) [3].The diagnostic criteria of TRADITIONAL Chinese medicine conform to the Guidelines for The Diagnosis and Treatment of Children with Recurrent Respiratory Tract Infection [4].Informed consent and voluntary participation, having signed a consent

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form.

Exclusion criteria: children with severe impairment or insufficiency of heart, liver and kidney function, abnormal central nervous system, poor compliance or inability to actively cooperate, lack of clinical data, and involuntary participation. According to the double-blind randomized control principle, groups were discussed, one group was called the regular group, the other group was called the reasarcch group. Each group had 50 cases. The research group included 26 males and 24 females, aged 2-7 years, with an average age of 4.3±1.9 years. The duration of the disease was 3-12 months, with an average of (8.2±1.5) months. The conventional group included 27 males and 23 females, aged 17 years (4.4±1.7) years. The course of disease was 2-12 months, with an average of (8.3±1.4) months. The basic data of each group were tested by clinical statistics, and the $P > 0.05$.

2.2 Methods

Levamidazole tablets (Shanxi Yunpeng Pharmaceutical Co., LTD., National drug approval H34021572, specification 2.5mg*100s) were administered orally to 50 children in the regular group, 2.5mg/kg each time, once a time /d, 2d only every week, one course of treatment lasted for 4 weeks, and 3 courses of treatment were maintained.

Bao erning decoction was administered to the research group, including 15g of atractylodes root, astragalus root, calcinated dragon fruit, 10g of radix pseudostellariae root, cassia twig, ophiopogonis root, hawthorn, huang jing, white peony, 5g of fangfeng, lotus leaf, shen qu, liquorice. The whole recipe is decocted into decoction with water. 1 dose is taken orally in 2D and decocted in several times. Oral administration twice a day, once in the morning and once in the evening;Use only 2 doses per week, one course for 4 weeks, and persist for 3 courses.

2.3 Observation index

Evaluation of clinical efficacy: after 3 months of treatment, the children were deemed to be effective if they had no infection or the frequency of infection was reduced and the course of disease was shortened. After 3 months of treatment, the frequency of infection was reduced by 50% or more and the course of disease was shortened. After 3 months of treatment, the number and course of infection did not change, or showed a serious trend, which was regarded as invalid. Overall efficacy (%) = significant efficiency + effective rate.The infection frequency of each child before and after treatment was observed and counted.At the same time, the occurrence of adverse drug reactions (such as abdominal pain, vomiting/nausea, head discomfort, etc.) in each child was observed and counted.

2.4 Statistical processing of data

Summarize and analyze the research data of the observation subjects, and use SPSS22.0 software to make statistics of the research data.The measurement data of normal distribution were expressed by mean ± standard deviation (x±s) and tested by T test.The number of cases or composition ratio (%) expresses the count data or grade data and USES the chi-square test.When $P < 0.05$, the difference was statistically significant.

2. Results

2.1 Comparison of basic clinical data between the study group and the conventional group

There was no difference in sex ratio, age and course of disease between the study group and the control group ($p>0.05$).See Table 1 for details.

Table 1 Comparison of basic clinical data between study group and conventional group

team	cases	Gender (Male/female)	Average age	Course of disease(month)
Research group	50	26/24	4.3±1.9	8.2±1.5
Regular group	50	27/23	4.4±1.7	8.3±1.4
t/X^2	-	1.423	1.058	0.989
p	-	0.268	0.337	0.514

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2.2 Comparison of overall efficacy between the study group and the conventional group

The overall efficacy of the study group was as high as 94.00%, and that of the conventional group was as high as 80.00%, with statistically significant results between groups (P <0.05).See Table 2 for details.

Table2 Comparison of overall efficacy between the study group and the conventional group

[N (%)]

team	cases	Show effect	Effect	Invalid	The overall effect of
Research group	50	23 (46.00%)	24 (48.00%)	3 (6.00%)	47 (94.00%)
Regular group	50	20 (40.00%)	20 (40.00%)	10 (20.00%)	40 (80.00%)
X^2	-				5.298
p	-				0.000

2.3 Comparison of infection frequency between the study group and the conventional group

There was no difference in the number of infection between the study group and the conventional group before treatment (p>0.05).After treatment, the number of infections in the study group and the control group *decreased, and the study group was significantly lower than the control group (P <0.05).See Table 3 for details.*

Table 3 Comparison of infection frequency between study group and control group (X ± S, times)

team	cases	Before the treatment	After treatment	t	p
Research group	50	6.8±1.3	2.5±1.6	15.068	0.000
Regular group	50	6.8±1.1	4.4±1.8	14.030	0.000
t	-	0.679	13.225		
p	-	0.135	0.000		

2.4 Comparison of adverse reactions between the study group and the conventional group

The total number of adverse reactions was 6.00% in the study group and 10.00% in the conventional group, and the results were meaningless between groups (X2=0.228, P =0.107).See Table 4 for details.

Table 4 Comparison of adverse reactions between the study group and the conventional group [n (%)]

team	cases	Abdominal pain	Vomiting/nausea	Discomfort in the head	A total of
Research group	50	1(2.00%)	1(2.00%)	1(2.00%)	3(6.00%)
Regular group	50	2(4.00%)	2(4.00%)	1(2.00%)	5(10.00%)

3. Discuss

Repeated respiratory tract infection in children is also called “compound infection”, which has a very high incidence rate and recurrence rate. Children with the disease occurrence and weakened immunity, vitamin supplement insufficiency, the improper medication and shorter treatment time and other factors, often cause children to sleep adequately, ache and unwell, spirit is depressed, a thin, pale, with varying degrees of symptoms such as diarrhea, high fever, runny nose, for clinical attaches great importance to and timely and effective treatment [5].Levamisole is an immune-enhancing drug, which can reduce the infection degree mainly by enhancing the immune function of children. However, this drug is not suitable for long-term use, or it will cause many adverse reactions, affect the clinical efficacy, and even damage the heart, liver and kidney function of children, which is very detrimental to the healthy growth of children [6].

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Traditional Chinese medicine believes that children with recurrent respiratory tract infection is “qi deficiency cold” and other areas, because children with weak qi, weak body, and difficult to resist the invasion of foreign pathogens caused by repeated colds. Therefore, traditional Chinese medicine treatment of children with recurrent respiratory tract infection is advocated warming Yang to help qi, qi solid table. Bao Er Ning Decoction is mainly used to treat the deficiency of health qi caused by the weakness of spleen and stomach or the weakness of body. The astragalus in the prescription can strengthen the spleen and benefit the lungs, drive away evil spirits and fix the appearance. Windproof can dispel wind evil; Atractylodes atractylodes invigorates and replenishes qi; The combination of three drugs plays the role of dispelling evil and fixing the table. Radix pseudostellariae supplements temper and produces fluid; White peony nourishing Yin nourishing blood, combined with cassia twig to mediate camp and guard; It can collect sweat and latent Yang, so as to avoid the body's vital energy flowing out with sweat. Huang Lean qi, healthy, strong bones and muscles; To strengthen the spleen and stomach, strengthen the acquired root, and thus achieve the effect of replenishing qi; Hawthorn and Divine opera can eliminate stasis in spleen and stomach, smooth temper and stomach qi, and improve transport of spleen and stomach. Lotus leaf dehumidification, xingspleen. The main function of Bao Er Ning Soup is to nourish qi and strengthen the surface, supplemented by xingpi and Health, which can not only strengthen the body's ability to resist exogenous pathogens by strengthening the surface and invigorating qi, but also promote the biochemistry of qi and blood by xingpi and health, nourish qi and improve the surface for a long time, so as to reduce the symptoms of repeated respiratory tract infection in children [7].In this study, the overall efficacy of the study group was higher than that of the conventional group, and the number of infections after treatment was significantly lower than that of the conventional group ($P < 0.05$).It indicates that the treatment scheme of Bao Er Ning decoction is more efficient and reliable. In addition, there was no difference in adverse reactions between the study group and the conventional group ($p > 0.05$).The results showed that Bao Er Ning decoction could not increase adverse reactions and was safe and worthy of clinical application.To sum up, Bao Er Ning decoction is recommended as the first choice in clinical practice for children with recurrent respiratory tract infection in remission stage, which has many advantages such as accurate curative effect, significant improvement of condition and high safety.

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