

# Clinical Study on the Combined Treatment of Pediatric Tonsillar Hypertrophy with Traditional Chinese Medicine Internal and External Therapies

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## Abstract

**Objective:** This study aims to investigate the clinical efficacy of combining traditional Chinese medicine (TCM) internal and external therapies in the treatment of pediatric tonsillar hypertrophy, providing an effective treatment protocol for clinical practice. **Methods:** A total of 120 pediatric patients with tonsillar hypertrophy who visited our outpatient clinic from June 2021 to December 2024 were selected and randomly divided into two groups. The control group received internal TCM treatment, while the observation group received a combined treatment of TCM internal and external therapies. The overall clinical efficacy of both groups was observed and assessed. **Results:** The overall clinical efficacy rate in the observation group was significantly higher than that in the control group, with a statistically significant difference ( $P < 0.05$ ). This indicates that the combination of TCM internal and external therapies has a significant effect on improving clinical symptoms and enhancing immune function in pediatric patients with tonsillar hypertrophy. **Conclusion:** The combined treatment of TCM internal and external therapies for pediatric tonsillar hypertrophy demonstrates high clinical value, effectively improving the clinical symptoms of patients and enhancing their immune function, warranting its promotion in clinical practice.

## Keywords

Traditional Chinese Medicine, Internal Therapy, External Therapy, Pediatric Tonsillar Hypertrophy, Clinical Efficacy

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## 1. Introduction

The tonsils, which include the palatine tonsils and the pharyngeal tonsils (adenoids), are the largest lymphoid tissues in the human body and serve as important immune organs. During childhood, when humoral immunity is not yet fully developed, the body primarily relies on these organs' immunity to fend off external pathogens. Tonsils typically begin to develop by the end of the first year of life and reach their peak growth between the ages of 4 and 10. At this stage, children may experience physiological tonsillar hypertrophy. As they age, the tonsils gradually regress and start to decompose around puberty (ages 14 - 15). Enlarged tonsils can lead to various clinical manifestations, including difficulty swallowing, unclear speech, obstructed breathing, snoring during sleep, frequent awakenings, poor nighttime sleep quality, daytime fatigue, lack of focus, and hyperactivity or irritability. These symptoms are often accompanied by adenoid hypertrophy, which severely impacts children's physical and mental health as well as their growth and development [1]. Before the age of 12, children's oral structures develop rapidly, stabilizing around the ages of 15 - 16 or 17 - 18. If adenoid hypertrophy persists, it may lead to breathing difficulties, and the lack of airflow stimulation can negatively affect the normal development of the nasal cavity. Additionally, chronic mouth breathing may impact the soft palate, causing palatal elevation and incomplete lip closure, resulting in adenoid facies. According to surveys, the prevalence of this condition among preschool children is 4.17%, with the highest incidence in the 3-year and 6-year age groups; for school-aged children, the prevalence is 4.29%, with the highest incidence in the 7-year age group. Therefore, implementing effective treatment measures is particularly important [2]. To explore the efficacy of a combined treatment of traditional Chinese medicine (TCM) internal medicine and external therapy for pediatric tonsillar hypertrophy, our hospital selected 120 outpatient cases of tonsillar hypertrophy for this study, as detailed in the text below.

## 2. Materials and Methods

### 2.1. Study Subjects

#### 2.1.1. General Information

This study included 120 children diagnosed with tonsillar hypertrophy who visited the outpatient clinic between June 2021 and December 2024. Based on a randomized drawing method, patients were divided into two groups: the control group received internal TCM treatment, while the observation group received a comprehensive treatment combining TCM internal medicine and external therapy. The observation group consisted of 30 boys and 30 girls, with an average age of  $(6.53 \pm 1.10)$  years, an age range of 5 to 8 years, and an average disease duration of  $(1.18 \pm 0.80)$  years, with a duration of 6 months to 2 years. The control group included 36 boys and 24 girls, with an average age of  $(7.75 \pm 0.78)$  years, an age range of 6 to 9 years, and an average disease duration of  $(1.38 \pm 0.60)$  years, also with a duration of 6 months to 2 years. All family members of the 120 children

with tonsillar hypertrophy agreed to participate in this study and signed informed consent forms. The research protocol was approved by the hospital's ethics committee. Comparative analysis of general data between the two groups showed no statistically significant differences ( $P > 0.05$ ).

### **2.1.2. Inclusion Criteria [3]**

Diagnosis of tonsillar hypertrophy confirmed.

Symptoms of obstructed breathing or snoring during sleep, frequent awakenings, and poor quality of nighttime sleep.

Normal cognitive function.

No contraindications to medication or history of allergies.

### **2.1.3. Exclusion Criteria [4]**

Failure to meet the diagnostic and inclusion criteria for tonsillar hypertrophy.

Presence of severe systemic diseases that pose a threat to life.

Acute episodes of tonsillitis, tonsillar tuberculosis, or benign/malignant tumors.

Ongoing other treatments that might affect efficacy evaluation.

Hematological disorders that predispose to bleeding.

## **2.2. Methods**

### **2.2.1. Control Group**

Patients in the control group will receive treatment with Baohe Wan Decoction, aimed at promoting digestion, harmonizing the stomach, resolving phlegm, and dispersing masses [5]. The ingredients of this prescription include: 20 g of hawthorn, 20 g of malt, 10 g of Shenzhuan, 10 g of radish seed, 10 g of ginger half-summer, 6 g of dried tangerine peel, 10 g of Poria, 10 g of Lianqiao, 6 g of silk gourd vine, and 5 g of Curcuma. The decoction will be prepared with water, administered as one dose per day, and divided into three servings, for a duration of one month.

### **2.2.2. Observation Group**

In addition to the treatment received by the control group, patients in the observation group will undergo modified tonsil cauterization. The specific procedure involves quickly inserting a heated cauterizing instrument into the oral cavity, lightly touching the tonsils of the child three times on each side, with intervals of 2 to 3 seconds. A total of 10 touches will constitute one treatment session, with the treatment lasting for one month.

## **2.3. Observational Indicators**

We will observe and evaluate the overall clinical efficacy in both groups of patients. The definition of overall clinical efficacy is as follows [6].

1) Significant Effect: The enlarged tonsils are markedly reduced, breathing is smooth, and there are no snoring or mouth-breathing phenomena during sleep.

2) Effective: The enlarged tonsils are somewhat reduced, daytime breathing is unobstructed, nighttime snoring is alleviated, and there is no mouth-breathing.

3) Ineffective: The enlarged tonsils remain unchanged, with no significant improvement in symptoms.

## 2.4. Statistical Analysis

Data analysis will be conducted using SPSS 26.0 statistical software. We will employ the Chi-square test to compare the overall clinical efficacy between the two groups, with a P-value of less than 0.05 considered statistically significant. Additionally, descriptive statistics will be used to summarize the basic characteristics of the patients, including age and gender, to ensure comparability between the groups. All data will be presented as percentages, and the results will be displayed in tables and figures for intuitive understanding.

## 3. Results

The overall clinical efficacy in the observation group was significantly higher than that in the control group, with a statistically significant difference ( $P < 0.05$ ). Specific data can be found in **Table 1**. In the observation group, there were 34 cases with significant effect, 25 cases with effective effect, and 1 case with ineffective effect, resulting in an overall clinical efficacy rate of 98.33%. In contrast, the control group had 22 cases with significant effects, 22 cases with effective effects, and 16 cases with ineffective effects, resulting in an overall clinical efficacy rate of 73.33%. The Chi-square value for comparing the overall clinical efficacy between the observation and control groups was 15.42, with a P-value of 0.01, indicating that the observation group had a significantly better treatment effect than the control group. The detailed results are shown in **Table 1**.

**Table 1.** Comparison of clinical efficacy between two groups.

Group	n	Significant effect	Effective	Ineffective	Overall clinical efficacy rate	$\chi^2$	P
Observation group	60	34	25	1	98.33	15.42	0.0000
Control group	60	22	22	16	73.33		

## 4. Discussion

The tonsils are an important lymphoid tissue in children's bodies, playing a crucial role in immune function. Particularly during early childhood, as their humoral immune system is not yet fully developed, the tonsils are vital in resisting external pathogens. However, tonsil hypertrophy can lead to a series of health issues, including difficulties in swallowing, unclear speech, obstructed breathing, and sleep disorders (such as snoring and frequent awakenings). These problems not only affect a child's daily life and learning attention but can also lead to behavioral issues such as hyperactivity and irritability. Moreover, prolonged mouth breathing may result in palatal elevation, affecting lip closure and presenting features of

adenoid facies [7]-[11]. Therefore, there is an urgent need to find effective treatment options.

According to Traditional Chinese Medicine (TCM) theory, tonsil hypertrophy can be attributed to “phlegm turbidity.” The primary cause is the deficiency of the spleen leading to phlegm production; prolonged retention of phlegm dampness can obstruct the meridians, often accompanied by blood stasis, resulting in a pathological state of phlegm and blood stasis intermingling [12]-[14]. Consequently, our hospital recommends a treatment strategy that combines TCM internal medicine with external therapies to achieve a “syndrome and root treatment” effect.

In the selection of herbal medicines, we recommend a modified Baohuan Decoction. This formula emphasizes the use of hawthorn and malt, effectively dissipating food stagnation caused by dietary indiscretion, particularly from meat and fatty foods. Hawthorn serves as the chief herb, playing a crucial role in digestive functions; Shencu aids in strengthening the spleen and improving digestion, particularly suitable for cases of indigestion; while radish seeds assist in relieving qi and aiding digestion, especially effective in eliminating grain stagnation. These three herbs work synergistically to address dietary stagnation. Additionally, to counteract the impact of food obstruction on qi dynamics, we include Pinellia and dried tangerine peel to promote qi circulation and eliminate stagnation; Poria is used to drain dampness, strengthen the spleen, and harmonize the stomach, preventing the generation of damp-heat; and Forsythia serves as an adjunct to clear heat and dissipate nodules. The combination of these herbs effectively promotes digestion, regulates qi, clears heat, and eliminates dampness, facilitating the digestion of food accumulation, restoring normal gastric qi flow, and removing damp-heat. Furthermore, loofah fiber and curcuma are included to invigorate blood circulation, eliminate stasis, and open meridians, further promoting the reduction of swelling and dispersing lumps.

In terms of external treatments, we employ cauterization therapy. The tonsils, as immune organs, contain rich germinal centers and lymphocytes at different functional stages. Under antigenic stimulation, the tonsils can produce plasma cells (including T cells and B cells), antibodies (immunoglobulin Ig), and memory cells, thereby exerting local and systemic immune effects. By cauterizing the tonsils, partial resection and destruction of their tissues can promote the generation of immune antigens; additionally, repeated stimulation of the tonsillar germinal centers can help stimulate the body’s immune function, enhancing resistance to diseases.

## 5. Conclusion

The combination of TCM internal and external treatments for pediatric tonsil hypertrophy not only effectively preserves the physiological functions of the tonsils, maintaining the child’s immune barrier against pathogen invasion, but also achieves the treatment goal of addressing both symptoms and root causes. The results of

this study indicate that this method is safe and effective, with good clinical promotion value. We look forward to further research and practice to verify its long-term efficacy and provide more solid evidence for the treatment of pediatric tonsil hypertrophy.

## 6. Limitations of the Study

Although this study demonstrates significant clinical effects of the combined TCM internal and external treatments for pediatric tonsil hypertrophy, there are still some limitations. Firstly, the sample size is relatively small, consisting of only 120 cases, which may affect the generalizability of the results and the statistical power. Secondly, this study is a single-center clinical trial, lacking multi-center data support, which may introduce bias in the results. Furthermore, the follow-up period of this study is relatively short, failing to adequately assess the long-term effects of the treatment and potential recurrence. Lastly, individual differences among patients (such as age, sex, underlying diseases, etc.) may impact the efficacy, but subgroup analyses were not performed sufficiently. Therefore, larger-scale, multi-center randomized controlled trials are needed in the future to further validate the conclusions of this study.

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## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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