

# Clinical study of oryzanol in adjuvant treatment of preschool children with variant cough

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**【 Abstract 】 Objective** To observe the effect of oryzanol on variant cough in preschool children. **Methods** 212 preschool children with variant cough were randomly divided into two groups. The treatment group (n=108) was given oryzanol tablet plus budesonide aerosol inhalation. Control group (n=104) was given budesonide aerosol inhalation only. Both groups were treated for 2 months, and the therapeutic effect was evaluated on the final reduction of variant cough. **Results** The curative effect of variant cough in the treatment group was more obvious than that in the control group ( $P < 0.05$ ), and the adverse reactions in both groups were mild. **Conclusion** It is better to treat variant cough in preschool children with oryzanol tablets than that with budesonide aerosol alone. Oryzanol tablets can relieve variant cough in preschool children.

**【 keywords 】** variant cough; oryzanol tablets; budesonide aerosol; preschool children

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A large number of studies and clinical practice have confirmed that variant cough is a typical psychosomatic disease in the respiratory system, and adverse psychological stimulation can induce the aggravation of cough in pre-school children. Clinically, oryzanol is often used to improve autonomic nerve function, reduce anxiety and tension, oryzanol can also play an anti-allergy role<sup>[1]</sup>. Budesonide aerosol is a kind of glucocorticoid with effective local anti-inflammatory effect. It is one of the first choice drugs in the treatment of variant cough. In this study, 212 cases of preschool children with variant cough were treated by the inhalation of budesonide in addition to oryzanol tablets. The purpose of this study was to compare the efficacy of oryzanol in the treatment of preschool children with the inhalation of budesonide aerosol alone, so as to investigate the effect of oryzanol in the relief of variant cough in preschool children. The results are reported as follows.

## 1 Information and methods

### 1.1 General information

A total of 212 preschool children with variable cough were randomly divided into two groups.

### 1.2 Diagnostic criteria

The diagnostic criteria for cough variant asthma in children in the tenth edition of the International Classification of Diseases (ICD-10)<sup>[2]</sup>: (1) Children can get sick at any age, but it is more common in preschool children; (2) cough occurs repeatedly for more than one month, which is characterized by attack at night or early in the morning, dry cough with less phlegm and aggravated symptoms after exercise; (3) there are no clinical signs of infection or long-term use of antibiotics is ineffective. (4) the use of bronchodilator drugs can relieve cough attacks; (5) have a personal or family history of allergy. At the same time, bronchial foreign bodies, congenital airway malformations, congenital laryngeal wheezing, pulmonary tuberculosis, bronchopneumonia caused by bacteria or mycoplasma, and diseases similar to bronchial asthma symptoms caused by surgery were excluded. In addition to detailed medical history and physical examination, lung function test is also needed.

### 1.3 Method

A total of 212 preschool children diagnosed in the outpatient department of variable cough were randomly divided into the treatment group (108 cases, 58 males and 50 females, average age ( $5.5 \pm 0.8$ ) years), and the treatment group (108 cases). There were 104 patients in budesonide aerosol group (control group), including 54 males and 50 females, with an average age of ( $5.7 \pm 0.7$ ) years. There was no significant difference in gender, age, course of disease and degree of disease between the two groups ( $P > 0.05$ ), indicating comparability.

### 1.4 Treatment

All patients were treated with routine and symptomatic treatment methods. In addition to the conventional inhalation of budesonide aerosol, the treatment group was additionally treated with oral orowasol (produced by Huainan Jiameng Pharmaceutical Co., Ltd., Chinese medicine approval number H34022089), 5-10 mg each time, 3 times/d orally. When the child's symptoms disappear, the oral administration of oryzanol should be discontinued. The control group was only treated with budesonide aerosol inhalation at the same dose as the treatment group.

### 1.5 Clinical observation

The frequency of cough and its decrease before and after treatment will be recorded. Remarkable effect: cough disappeared within 2 weeks; effective: cough disappeared or obviously alleviated within 1 month; ineffective: cough still existed more than 2 months, no decrease in frequency.

### 1.6 Statistical methods

Comparison of enumeration data between groups was performed by  $X^2$  test, measurement data was expressed by mean  $\pm$  standard deviation ( $\bar{X} \pm S$ ), and analysis between groups was performed by t test.  $P < 0.05$  indicated a significant difference.

## 2 Results

### 2.1 Comparison of curative effect between two groups before and after treatment

There was no significant difference between the two groups before treatment ( $P>0.05$ ), and the cough relief rate in the treatment group was significantly lower than that in the control group ( $P<0.05$ ), as shown in Table 1.

Table 1 Comparison of curative effect rate between two groups (%)				
Group	Effect	Improvement	Invalid	Total effectiveness
Treatment group (n=108)	57(53)	39(36)	12(11)	96(89)
Control group (n=104)	41(40)	38(36)	25(24)	79(76)

Note: Comparison between the treatment group and the control group,  $P<0.05$ .

### 2.2 Security

In the treatment group, 1 patient developed skin rash and 1 patient was drowsy, while in the control group, 2 patients had shortness of breath and 1 patient had ankle edema, all of them continued to complete the treatment; Blood routine and urine routine, liver and kidney function, blood glucose, blood lipid during treatment were not found abnormal, no other abnormal performance.

## 3 Discussion

Variable cough is a relatively special type of asthma, which can be understood as occult asthma. It has been clinically confirmed that it is one of the psychosomatic diseases with multi-factor involvement and complex pathogenesis, and the influence of psychosocial factors on the pathogenesis of variant cough has been paid more and more attention. More and more research evidences have proved that emotional factors, especially anxiety, have adverse effects on the occurrence, development and prognosis of variant cough<sup>[3]</sup>. However, psychological factors are not the basic cause of variant cough, the most basic cause of variant cough is airway hyperresponsiveness. However, psychological factors can be used as inducing factors to promote the attack of variant cough. Some children with variant cough can avoid the attack of cough by immediately relaxing, resting or distracting at the beginning of cough. It has been reported that about 21% to 43% of asthma attacks are related to emotional factors. It has been reported that relaxation training can improve the lung function of patients with variant cough and help to control cough attack<sup>[4]</sup>.

At present, the influence of psychological factors on the mechanism of bronchial asthma is not very clear, but it has been proved that psychological factors have an influence on individual nerve intermediary, endocrine mediator and epidemic immunity mechanism. Studies have found that psychological stress events can cause airway smooth muscle dysfunction, which can increase airway resistance in patients with bronchial asthma. At the same time, immunological studies have found that the initiation of allergic inflammation in bronchial asthma is closely related to psychological factors. Some experts believe that strong emotional changes act on the cerebral cortex, and the excitation of the cerebral cortex acts on the hypothalamus, promoting the release of acetylcholine through the vagus nerve, causing bronchial smooth muscle contraction and mucosal edema, thus inducing or aggravating variant cough<sup>[5]</sup>.

Oryzanol is a kind of drug that can regulate the function of autonomic nervous system. It is one of the most commonly used anti-anxiety drugs at present. It has a variety of biological activities. It is clinically used in various diseases caused by dysfunction of diencephalon, hypothalamus and limbic system. The increase of catecholamine-like substances can increase the proliferation of basophils in the anterior pituitary, affect the secretion of hormones in the pituitary, and coordinate the normal function of the pituitary and autonomic nerve centers. It can adjust autonomic nerve function<sup>[5]</sup>, regulate endocrine balance disorder, improve mental disorders, stabilize mood, reduce anxiety and tension, improve sleep, and improve immunity. Oryzanol has many uses in clinical application, mainly in psychological and emotional aspects, such as various neuroses, tension syndrome, climacteric syndrome, concussion sequelae and so on. For children, the symptoms of tension, anxiety, sweating and shortness of breath in the face of stress events are caused by autonomic nerve disorders, which can be prevented by taking oryzanol in advance.

In this study, the psychological factors were considered. The use of oryzanol, a common and less side-effect drug, was used to assist in the treatment of variant cough and observe the effect. The results showed that the use of conventional drugs in the pre-school children with cough variant asthma was beneficial to the patients' emotional stability, significantly reducing the anxiety and other adverse emotions of children, enhancing the effect of Budesonide aerosol on children, helping to control the cough of children, effectively improving clinical efficacy, and mild adverse reactions, In addition, the price of oryzanol is cheap and the curative effect is safe, which is suitable for clinical application.

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