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CLINICAL EFFECTIVENESS OF COUGH TREATMENT IN PEDIATRIC PRACTICE

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Abstract: Cough is one of the leading reasons for visiting a pediatrician. The article presents the results of a study of the clinical effectiveness of treating dry cough using Sinekod syrup. The study involved 60 children aged 3–15 years with infectious diseases of the upper respiratory tract and complaints of dry (unproductive) cough. Children in the 1st group (main) received Sinekod syrup in addition to standard therapy, while in the 2nd group (comparison) children received Stoptussin-Fito syrup.

Keywords: children, dry cough, sleep, therapy, butamirate citrate.

INTRODUCTION

The prevalence of cough in children, according to statistics, is 28–30% [1, 2]. Cough is a complex neuroreflex act, which results in a powerful, explosive flow of air, which helps clear the respiratory tract of pathological secretions and irritants [3]. Today, the cough reflex is part of the somatosensory system, includes visceral sensations, reflex motor and associated behavioral reactions.

MATERIALS AND METHODS

Cough is a protective mechanism aimed at clearing the respiratory tract. Cough can be caused by infectious and non-infectious agents. Among infectious causes in children, viruses are primarily distinguished, and among non-infectious causes, an allergic component.

There are three phases of cough [4, 5]:

■ inspiratory phase, which is preceded by cough irritation. During the reflex opening of the glottis, a deep forced inhalation occurs with the participation of all inspiratory muscles. The volume of inhaled air can vary from 50% of the tidal volume to 50% of the vital capacity of the lungs. The duration of this phase is about 2 s;

■ compression phase: the upper respiratory tract (URT) - the vocal cords and glottis - reflexively close. Then there is a sharp contraction of the expiratory muscles - internal intercostal and abdominal, which is characterized by a rapid increase in intrathoracic and intra-abdominal positive pressure, which remains elevated for approximately 0.5 s; ■ expiratory phase - the coughing phase itself. Cough is distinguished and classified by intensity - strong, light and coughing; by duration - periodic and constant; by nature - dry or with sputum production [2].

RESULTS AND DISCUSSION

There are many causes and mechanisms of cough in childhood, and cough characteristics are a powerful tool in the practice of a clinician, which helps to determine the possible level of damage and forms a diagnostic algorithm for the drug selection of an antitussive drug. Respiratory

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diseases to this day represent not only a medical, but also a socio-economic problem, so the development and implementation of modern diagnostic and therapeutic technologies are extremely important [3]. Today, you can find several dozen drugs that have an antitussive effect, among which traditionally stand out antitussive drugs (central and peripheral action), drugs with indirect antitussive action (bronchodilators, decongestants, etc.), as well as combination drugs [4].

One of the main problems in treating cough in children is finding the most effective and safe means of therapy. In infectious diseases of the upper respiratory tract in children, it is advisable to use drugs that simultaneously affect several components of the pathological process. It is especially important to consider this in the presence of a dry cough in a child, which bothers him both day and night. Currently, several groups of drugs are used to treat cough: expectorants, mucolytics and antitussives. The action of antitussives is aimed at suppressing the cough reflex both by acting directly on cough receptors and by suppressing the cough center. One of such drugs is butamirate citrate Sinekod. According to the instructions, the indication for the use of Sinekod is the symptomatic treatment of dry cough of various etiologies, including cough associated with influenza, acute pharyngitis, laryngotracheitis, acute obstructive laryngitis, chronic bronchitis and other infectious, inflammatory and allergic diseases of the upper and lower respiratory tract. The scheme for taking Sinekod syrup: orally, before meals, measure out with a measuring cap: children from 3 to 6 years old - 5 ml 3 times a day, 6-12 years - 10 ml 3 times a day, 12 years and older - 15 ml 3 times a day. The active substance of the drug, butamirate, is an antitussive agent of central action. It does not belong to opium alkaloids either by chemical structure or by pharmacological properties, but nevertheless suppresses cough, having a direct effect on the cough center. At the same time, it does not cause respiratory depression, drug dependence, and does not have a narcotic or hypnotic effect. In addition, Sinekod has a bronchodilating effect. It helps to facilitate breathing, improving spirometry indicators by reducing airway resistance and blood oxygenation. It is important to remember that butamirate suppresses the cough reflex; the simultaneous use of expectorants should be avoided to avoid accumulation of sputum in the respiratory tract.

In the first days of the study, the clinical picture in children of both groups was characterized by an equal degree of severity of all analyzed manifestations.

Initially, all patients had a dry (unproductive) cough during the day and at night against the background of IZ URT and sleep disturbance.

At the beginning of the study, the groups we compared did not have reliable differences in the frequency of both daytime and nighttime cough.

On the 5th day, in patients of the main group, while taking the drug Sinekod, dry cough was stopped in 43% of children, and in the comparison group - only in 7%. When assessing the dynamics of the severity of daytime and nighttime cough in the study groups, a faster regression of symptoms was observed in patients of the 1st group.

On the 8th day from the start of treatment, in the 1st group of children, compared with the 2nd, there was a positive dynamics of reduction in daytime cough - by more than 2 points according to VAS (OR = 7.7; CI = 2.6–22.4; $\chi 2 = 13.8$; $p < 0.001$), nighttime cough - by more than 3 points according to VAS (OR = 18.5; CI = 5.8–59.2; $\chi 2 = 27.1$; $p < 0.001$). On the 11th day of treatment in the 1st group, compared with the 2nd (OR = 10; CI = 2.9–34; $\chi 2 = 13.4$; $p < 0.001$), a decrease

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in the severity of daytime cough according to VAS by more than 4 points was reliably more often noted. The severity of night cough according to VAS in the 1st group compared to the 2nd (OR = 13.1; CI = 3.8–45; $\chi 2 = 17.1$; $p < 0.001$) also significantly decreased more often by more than 4 points.

CONCLUSION

Our study has proven that Sinekod is an effective and safe drug for use in the complex therapy of IZ URT in children, and helps to quickly stop dry cough. It begins to act from the first day of therapy, and by the 8th day, the intensity and frequency of dry cough are reduced by more than 4 points. The combination of effectiveness and safety makes it possible to use Sinekod in the therapy of dry cough in children. Sinekod should be prescribed in cases where the disease is accompanied by unproductive, frequent, painful, painful cough, leading to sleep disturbance in the child.

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