HERBAL MEDICINES AND THEIR USE

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Abstract

The article discusses the pharmacological properties of medicinal products containing combinations of medicinal plant extracts as active ingredients: thyme, ivy and primrose. The article discusses the causes and mechanisms of cough, as well as the possibilities of its treatment with the help of herbal preparations, since herbal medicine occupies a special niche in the treatment of acute respiratory infections. Biologically active substances of plants are more naturally included in metabolic processes; treatment with herbal medicinal preparations is characterized by better tolerability and a lower incidence of side effects and complications.

Key words: *herbal medicines, expectorants remedies, cough, acute respiratory infections, respiratory airways.*

Introduction

The advantages of medicinal plants also include their high biological activity and a wide therapeutic index (the difference between the therapeutic and toxic dose). Research data is presented indicating the multi-purpose effect of herbal medicines on all parts of the pathogenesis of cough: facilitating coughing up sputum, improving the drainage function of the bronchi, as well as an anti-inflammatory effect, which is an integral part of treatment.

Thyme has an expectorant, antiseptic and anti-inflammatory medicinal effect. Ivy leaf extract, which also has a bronchodilator effect, is characterized by similar properties. Primrose root extract has expectorant, secretolytic and cough softening properties. It is important to note that the use of a combination of extracts provides a synergistic clinical effect. A review of key clinical studies is provided confirming the effectiveness of the use of combinations of extracts of thyme, ivy and primrose (the original medicinal herbal preparation Bronchipret, approved for medical use in the Russian Federation in two dosage forms: syrup and film-coated tablets) in adults and children in relation to cough and other symptoms of acute respiratory infections.

The compatibility of herbal remedies with other drugs for the treatment of respiratory pathologies was noted.

The most common symptom of bronchopulmonary pathology is cough. It acts as a protective mechanism, the purpose of which is to remove foreign particles, microorganisms or pathological bronchial secretions from the respiratory tract, cleanse and restore airway patency.

It may be dry or accompanied by sputum. Cough occurs when vagus nerve receptors are irritated in reflexogenic zones located on the posterior surface of the epiglottis, in the larynx, in the area of the vocal cords and subglottic space, in the bifurcation of the trachea and the branches of the main bronchi, on the pleura.

It is significant that the function of the ciliated epithelium is impaired in a number of viral infections; chronic inflammatory processes; exposure to various toxic substances that usually cause chronic bronchitis/chronic obstructive pulmonary disease. However, cough can perform a protective function only with certain rheological properties of sputum (viscosity, elasticity, adhesiveness). The sputum can be liquid, and then it easily moves along the bronchial tree, reaches the cough receptors, causes a cough - and is easily coughed up. With the development of an infectious-inflammatory process of the respiratory system, a change in the nature of cough occurs in the form of an increase in its frequency, intensity and duration, as well as a violation of the ability to cough up sputum.

Material and methods

At the onset of an acute respiratory infection, a dry or unproductive wet cough with a scanty amount of sputum is usually noted. When the mucous membrane of the respiratory tract is inflamed due to impaired mucociliary clearance, cough becomes a protective reaction aimed at improving the drainage function of the bronchi. Ineffective cough may be due to significant viscosity of sputum, an insufficiently expressed cough reflex, insufficiently deep breathing, or impaired bronchial obstruction. In acute respiratory diseases, secretory hyperreactivity develops, accompanied by increased formation of thick viscous secretion, and disturbances in mucociliary clearance lead to worsening of secretion expectoration and contribute to its excessive accumulation in the respiratory tract.

Viscous sputum does not move well from the distal parts of the airways; it can become fixed on the bronchial mucosa, and considerable effort or repeated coughing is required to separate it. Characteristics of cough can also help determine the cause of its occurrence, for which it is important to determine its duration. According to

the duration of existence, cough is divided into acute (up to 3 weeks), protracted (subacute) (from 3 to 8 weeks) and chronic (more than 8 weeks).

This division is largely arbitrary. Thus, a cough that develops during a respiratory infection (initially defined as acute) in some cases lasts much longer than 2-3 weeks due to the fact that a viral infection can cause generalized inflammation of the bronchial mucosa, manifested by severe hyperreactivity and hyperproduction of bronchial mucus. Post-infectious cough may continue to bother the patient for a long time.

In the absence of correct timely treatment of cough, the progression of the inflammatory process and desquamation of the ciliated epithelium can contribute to the addition of bacterial flora and the development of complications. As symptomatic treatment, drugs are used that affect the frequency, intensity and nature of cough.

In the vast majority of bronchopulmonary diseases, improvement of the "drainage" function of the bronchial tract is required, including with the help of pharmacological agents. Depending on the pharmacodynamics, they include mucolytic, antitussive and expectorant drugs. Recently, new drugs have appeared that can change the rheological properties of sputum and adhesion indicators, as well as facilitate the removal of sputum physiologically. For a long time, the main drugs used for this purpose were expectorants, the action of which is largely associated with stimulation of receptors in the mucous membranes of the bronchial tree and mechanical enhancement of the movement of sputum.

Result and discussion

The authors conclude that Bronchipret syrup is recommended for the treatment of uncomplicated acute respiratory infections in children accompanied by cough from the first day of illness as monotherapy, which helps to reduce the total duration of acute respiratory disease and reduces the frequency of prescription of antibacterial therapy. It is noted that in case of ARI, treatment with Bronchipret syrup reduces the duration of cough and auscultation symptoms in children. In a 2014 study

A.I. Safina et al assessed the effectiveness and tolerability of Bronchipret® syrup for ARI in frequently ill children. We observed 54 children diagnosed with "Acute respiratory infection accompanied by dry cough", who were divided into two groups. Both groups received antipyretics, decongestants, and local antibiotics. Treatment of patients in group 1, in addition to the main therapy, included the prescription of Bronchipret.

As a result, in patients of group 1, body temperature normalized earlier; the severity of catarrhal symptoms decreased from the 3rd day. diseases. The

effectiveness of cough treatment in patients of the 1st group was 98%, 2nd – 61%. The authors conclude that Bronchipret has an antitussive, expectorant and anti-inflammatory effect in the treatment of ARI in frequently ill children. It can be recommended for use in the treatment of this form of pathology from the first day of the disease in an age-appropriate dosage, duration - at least 10 days. The clinical effectiveness of Bronchipret was confirmed in an open randomized controlled comparative study of the effectiveness and tolerability of the drug Bronchipret syrup, conducted by the Scientific Center for Children's Health of the Russian Academy of Medical Sciences on an outpatient basis.

A clinical study was conducted to evaluate the effectiveness and tolerability of the drug compared to inhalation of saline NaCl 0.9% solution via a nebulizer. We observed 50 children aged from 3 months to 6 years with a clinical diagnosis of acute tracheobronchitis and recent onset of sputum production (less than 2 days). Two studies performed according to the gold standard of evidence-based medicine - a double-blind, randomized, placebo-controlled design - are also noteworthy. The first evaluated the efficacy and safety of a combination of thyme herb and primrose root dry extract and placebo in the treatment of patients suffering from acute bronchitis with productive cough over an 11-day, parallel-group study period. The study included 361 patients. The results of this study showed that the average reduction in cough attacks on days 7–9 was observed in 67.1% of cases with the combination of thyme + primrose compared with 51.3% in the placebo group ($p < 0.0001$).

Conclusion

Thus, the choice of an effective drug in the treatment of cough remains a pressing problem in clinical practice. A major role in the symptomatic treatment of acute respiratory infections accompanied by cough is played by herbal medicines with a well-known composition and mechanism of action, which have undergone and are undergoing serious studies of effectiveness and safety. Carefully selected components of official herbal remedies in the form of a syrup based on natural plant extracts have an effective effect on coughs. Distinctive features of the medicinal herbal preparation Bronchipret® are its high efficiency in the treatment of cough in children and adults, safety and complex action: anti-inflammatory, mucolytic, antimicrobial, antiviral.

The proven high effectiveness and safety of Bronchipret allows us to recommend it as the drug of choice when symptomatic treatment of cough is necessary for both adults and children, in combination with or without the necessary etiotropic therapy.

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