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THE USE OF NATURAL REMEDIES IN THE COMPLEX TREATMENT AND REHABILITATION OF CHILDREN AFTER ACUTE RESPIRATORY VIRAL INFECTION

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Abstract: Pharmacotherapy of cough in the treatment of ARVI in children has its own difficulties, determined by the nature of the cough, its duration, etc. The use of herbal medicine (plantain and thyme extract) is advisable for the treatment of cough not only in acute inflammatory diseases of the upper respiratory tract, but also during the period of convalescence/rehabilitation. The combination of herbal medicine and special exercises improves the condition of children after acute respiratory viral infections.

Keywords: Acute respiratory infection, bronchitis, pneumonia, massage, children, cough, herbal treatment.

Most requests for medical care in outpatient practice are associated with acute respiratory viral infection (ARVI), which is due to the widespread distribution of respiratory viruses [1]. In the absence of effective etiotropic therapy for ARVI, relief of the main symptoms of the disease is justified: poor health, fever, runny nose, cough. At the same time, cough is the most common cause of concern for parents of a sick child and doctors. As a rule, a cough in mild or moderate acute respiratory viral infections is a consequence of mucus draining from the nose along the back of the throat, as well as a sore throat due to pharyngitis. Centrally acting cough medications (butamirate, oxeladin) are used only for dry cough, which rarely happens with ARVI. Expectorants and mucolytics, which thin mucus and increase secretion in the bronchi, are often used for bronchitis [3]. For the treatment of pharyngitis, manifested by a sore throat, drugs with an astringent effect may be effective, in the form of sprays and rinses (from 2.5–3 years), tablets and lozenges for resorption (from 4–6 years).

In the absence of effective antiviral drugs for the treatment of ARVI, effective and safe symptomatic, mainly over-the-counter, drugs are needed. Therapy with combined herbal medicines allows not only to significantly reduce treatment costs, but also to minimize possible errors associated with dosing, frequency of administration and drug polypharmacy aimed at relieving individual symptoms. Eucabal® is a combined herbal medicine containing liquid extracts of thyme (thyme) and plantain as active substances; it belongs to the pharmacological group “expectorant of plant origin”. Thyme, which contains phytoncides and phenols (thymol and carvacrol), determines the bactericidal effect of Eucabal on gram-positive coccal microflora and the bacteriostatic effect against gram-negative bacteria [2]. It is important that phenols exhibit sufficient activity against fungal and antibiotic-resistant microbial flora, including L-form bacteria [2]. Essential oil and flavonoids of thyme have an expectorant and secretolytic effect due to the fermentation of thick viscous secretions and increased motor activity of the ciliated epithelium, and also cause an antispasmodic effect, providing moderate bronchodilation, which helps improve breathing and reduce expiratory shortness of breath. Thyme, one of the components of which is luteolin, has an antioxidant effect and intracellularly blocks the transmission of the activation signal to the nuclear transcription factor NFκβ (nuclear factor kappa β), reducing the expression of genes responsible for the production of proinflammatory cytokines (IL-1β, IL-6, TNF- α), chemokines, adhesion molecules, proteinases, which are

effective in preventing the progression of the inflammatory process [3]. Thyme also has a calming effect, which is important for patients, given the possible additional neurogenic mechanism of cough, difficulty falling asleep, and nervousness.

Plantain, due to the content of plant mucins, reduces irritation of the mucous membrane of the trachea and bronchi, reduces the intensity of dry non-productive cough, which significantly speeds up recovery. Phytoncides and phenols help to liquefy bronchial secretions, enhance their evacuation by the ciliated epithelium, reduce the severity of catarrhal phenomena in the respiratory tract and have an antimicrobial effect (the effect of aucubin against Staphylococcus aureus), protecting the mucous membrane from irritation. Also, aucubin, together with chlorogenic acids and cataptol, enhances the induction of interferon, which ensures the antiviral activity of the drug [4, 5]. The glycoside plataginin, which is part of plantain, inhibits the cough reflex at the central level, which is important for non-productive dry cough . Thus, the activity of the drug Eucabal® for the treatment of cough in children is due to the combined effect of its components (thyme and plantain extract), providing antimicrobial, expectorant and anti-inflammatory effects on the body, which makes it possible to recommend it as a complex anti-inflammatory therapy for diseases of the upper and lower respiratory tract ways, especially with an unproductive cough.

Any infectious disease “includes” the human body’s immune system in the fight. In children, due to the immaturity of their immune system, mainly in those who are often ill, “resources” weaken quite quickly, especially if a bacterial infection is added to an existing viral infection. In these cases, as a rule, antibiotics are prescribed, which, due to their side effects, negatively affect many body systems [7]. What should you pay attention to during the period of convalescence/rehabilitation of children after ARVI, especially complicated by bronchitis and pneumonia?

- Limit (minimize) active physical activity, since a weakened body requires careful handling. Therefore, in the first two weeks after ARVI, it is important to provide the child with a calmer lifestyle.
- Replenishment of fluid losses. Intensive drinking regimen is indicated in the first 2–3 days after recovery. The temperature of the liquid consumed should be equal to the child's body temperature (if too cold or hot drinks are used, the body will need to spend additional energy on heating or cooling).
- Active vitaminization. Vitamins take an active part in all metabolic processes, their losses during illness are obvious, because during this period the body is forced to work more intensely, and accordingly, its “expenses” increase.

It is useful to give your child “live” vitamins - fruits, vegetables, fresh juices, and only if this is not possible - a multivitamin complex in accordance with age.

- Walking in the fresh air.
- Avoiding crowds of people. Minimizing trips to public places during the first week after recovery will reduce the risk that a weakened body will be re-infected.
- As a preventative measure for ARVI, before visiting a children's group, nasal forms of interferons or bacterial lysates can be instilled into the nose, which will restore local immunity.

- If a child has been prescribed antibiotics, then there is a high probability that he will develop disturbances in his intestinal microflora, which will require its normalization.
- Particular attention should be paid to the child's nutrition. During the period of convalescence, it is useful to include in the diet foods containing large amounts of protein: lean fish, lean meat, mushrooms (for older children), legumes (lentils, peas or beans), nuts (preferably walnuts or a handful of other types of nuts or seeds, preferably sprouted, peanuts should be excluded).

The source of B vitamins are whole grain porridges - buckwheat, millet, whole oats, pearl barley, brown rice, as well as whole grain bread. But it is better to exclude confectionery products, bread made from premium flour, and pasta products from the diet for this period. An important place in the recovery of a child after an acute respiratory viral infection is given to iodine. It has an impact on general physical and mental health, cell maturation, and is involved in the regulation of almost all types of metabolism, the state of the nervous and cardiovascular systems. In this regard, it is important to eat seaweed and other types of seafood after the flu. After an infection, a weakened body needs enzymes to maintain all vital functions [5]. They are found in fresh vegetables, herbs, fruits, fermented milk products - kefir, biokefir, matsoni, yogurt, natural homemade yogurt, as well as in fermented products - cabbage, beets, apples, cucumbers, tomatoes, plums, watermelons, carrots. It is useful to give children freshly squeezed juice - apple-carrot, carrot-beet, etc. In addition to a special diet, detoxification can be carried out due to the fact that when a large number of cells die in a viral war, the child's body encounters toxic decay substances, which must be removed Alkaline mineral water, cranberry juice, lingonberries with honey, tea made from ginger, cinnamon, cardamom, coriander, and nutmeg will help. Herbal teas are very useful. Taking Eucabal can be continued during the period of convalescence/rehabilitation of the child. The duration of its use is determined individually, depending on the severity of the disease, and for mild forms it is 2 weeks. It is recommended to take the drug for several more days to a week after the symptoms of the disease disappear. Prescribing Eucabal in complex rehabilitation (proper care, massage and therapeutic exercises) for children after acute respiratory viral infections (bronchitis, pneumonia) can increase its effectiveness, helping to improve the condition of the child's respiratory system.

How to correctly perform some therapeutic "manipulations" prescribed for the treatment of cough in children with ARVI (bronchitis, pneumonia). Most medicines for children are currently produced in liquid form (solutions, syrups, suspensions) with measuring spoons, beakers, and measuring syringes. It is important to follow the dosage, clearly measuring the required amount [6]. Liquid preparation for children is most often prescribed 1 teaspoon, which holds 5 ml of the substance. They try to give medicines for children a pleasant taste and smell. But what if the child categorically refuses to take the medicine? How to give liquid medicine to a baby?

■ Place the child sideways on one knee, and use your other knee to support the baby's legs. With one hand, hug the child, slightly pressing him to you; with the same hand you can hold the baby's arms. With your free hand, bring the spoon to the baby's mouth and carefully pour in the medicine, immediately wash it down with water from a cup or pacifier. This manipulation can be carried out with an assistant: one holds the baby, and the other gives the medicine.

■ To distract the child's attention, you can use toy dishes (after washing them well first), or a beautiful cup. Now almost all medicines for children are produced with pleasant fruit flavors, but if the baby still does not open his mouth and resists, press your finger on his chin to move the lower jaw down. If this fails, insert the spoon between the teeth or gums (from the side of the

cheek) and carefully turn it with its edge - the child's mouth will open and the medicinal solution can be introduced into it.

■ Another way: lightly squeeze the child's nose with two fingers, he will open his mouth to breathe, and at this time carefully pour the medicine into him. Be sure to inject the liquid medicine into the cavity between the jaw and cheek, directing it deep into the mouth. This can be conveniently done using a disposable syringe (no needle!) or a measuring syringe included with some medications.

You need to unclench your nose after the substance is swallowed. Perform the manipulation gently so as not to frighten or injure the child. How to do inhalations correctly? Steam, heat-moist, oil and other inhalations are often used to treat ARVI. They cause thinning of mucus, promote the removal of sputum, reduce swelling of the mucous membranes of the respiratory tract, thereby improving their permeability, protect the mucous membranes from harmful external influences, and help suppress infection. For inhalations, use special devices - inhalers. They can be thermal or ultrasonic. Pour boiling water into the container of the thermal apparatus, drop in the medicine for inhalation, and use an electric heater to maintain the operating mode of inhalation. Place your child in front of the sprayer [7]. By opening his mouth and taking deep breaths, the child inhales the sprayed liquid. The child's cry does not interfere with inhalations, because during the cry his mouth is open and his breathing movements are deep.

Typically, inhalations are carried out 3-4 times a day.

- In an ultrasonic device, micro-oscillations are created in the liquid using a piezoelectric vibrator, leading to the formation of sprayed particles of a therapeutic aerosol over its surface. Such devices are very effective.
- Currently, medications are produced in special cylinders with aerosol sprays. Such medications are prescribed, for example, to children with bronchial asthma or chronic tonsillitis.

This form of the drug allows for effective treatment of the upper respiratory tract with medicinal fine particles. Use these aerosol medicine packages strictly in accordance with the accompanying instructions. To treat diseases of the upper respiratory tract, "pencils" for inhalation are also used - small-sized tubular inhalers, inside of which there are volatile medicinal substances based on oils and esters. Treatment with pocket inhalers is very convenient. Despite the simplicity of inhalations, their effect on the child's body is quite strong not only in the respiratory system, but also in the nervous and cardiovascular systems. Massage and physical therapy after suffering from acute respiratory viral infection (complicated by bronchitis, pneumonia) at home.

The goals of rehabilitation of children after acute respiratory viral infection, especially complicated by bronchitis, include increasing blood and lymph circulation, reducing and eliminating inflammatory changes in the bronchi, restoring the drainage function of the bronchi, and increasing the overall resistance of the child's body. The means of rehabilitation for children are massage and physical exercises. The indication for massage is reduced sputum discharge.

Contraindications: age (children under 6 months); tracheitis and laryngitis, accompanied by fever. Some types of massage for bronchitis: drainage massage; chest massage; acupressure; honey massage. Keep in mind that massage for bronchitis in children will only be effective if the mucus is wet. To do this, use the drug Eucabal® and give the child plenty of warm drinks. It is important to choose the right time for such manipulations:

■ an hour before bedtime, so that phlegm does not interfere with sleep,

■ two hours after eating,

■ an hour before meals, so as not to provoke vomiting.

Drainage massage is performed in several stages. When massaging the back for bronchitis, the child must be placed with his stomach on a cushion or pillow so that the pelvis is higher than the head, so that sputum drains from the lower sections of the bronchi [8]. The starting position of the child is on his stomach. First, warm your back skin with rubbing movements for 1–2 minutes. "Stroking" is carried out along the spine with the hands in the upward and downward direction (3–5 times), and then with the pads of the fingers, stroking is carried out from the spine along the ribs to the side (2–3 times on each side).

Next, the direction of the rubbing movements changes: from the spine to the side, along the intercostal spaces (2-3 times on each side). "Sawing" - the arms are located along the spine, and the palms are close to each other. The direction of hand movements back and forth at the same time towards each other is reminiscent of sawing. The back massage is performed to the left and right of the spine separately, for 20–30 seconds. "Chopping" - using the edges of the palms with fingers apart, striking movements are made in the interscapular area of the child (excluding touching the spine itself and the lumbar region). "Patting" - with palms bent in the shape of a house roof, they pat the entire back of the baby (excluding the lumbar region).

These shock techniques are carried out for 1–2 minutes, at which time the child begins to cough, which removes mucus from the respiratory tract. Chest massage is also carried out in several stages [9]. The starting position of the child is on his back. "Stroking" is carried out along the sternum with the palmar surface of the hands in the direction from bottom to top and to the shoulders 3–5 times; then, using the fingertips, stroke from the sternum along the ribs to the side (3–5 times on each side). "Rubbing" - with the pads of your fingers, you need to move forward spiral movements in the area of the sternum, along its edges from bottom to top (2-3 times). Next, the direction of the rubbing movements changes and the fingers should move from the sternum to the side, along the intercostal spaces (2-3 times on each side). In this case, it is not recommended to massage the heart area. Simple exercises to improve the condition of the respiratory system in children Children from three to six years old:

1. Place a feather or a piece of cotton wool on the table. The baby should blow them away - like the "wind". At the same time, it is either a light breeze or a hurricane. Thanks to this exercise, the functioning of the lower parts of the lungs, which do little work during normal breathing, improves.

2. Inflating balloons. In order for the rubber to begin to stretch, you will have to exhale forcefully, and more than once. When the baby inflates 1-2 balloons, let him start blowing soap bubbles. Repeat the change of classes several times. By alternating the pace and force of inhalation and exhalation, different parts of the lungs are alternately ventilated.

3. "Blowing" bubbles with a drinking straw in a glass of water/drink is a good respiratory exercise.

This activity can replace blowing soap bubbles in the previous exercise if the baby is not yet able to make them without swallowing soap. Children from seven years old:

1. The child needs to take a deep breath, hold his breath for 3-4 counts, and then exhale sharply. Repeat 5-7 times. During the exercise, all cells of the body (including lung cells) are maximally enriched with oxygen, and this, in turn, accelerates the removal of toxins, and therefore increases the child's resistance to viruses and bacteria.

2. While inhaling, the child should flap his arms like a bird's wings and hold his breath for 1-2 seconds. Then, slowly lowering your "wings," exhale very slowly. Due to this exhalation, the maximum number of alveoli (bubbles in the lungs through which gas exchange occurs) manages to "straighten out." And then, with the subsequent inhalation, the "expanded" lungs capture even more oxygen.

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