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Symptoms and Common Treatment of Pneumonia in Children

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Abstract: Pneumonia, as the first cause of pediatric hospitalization mortality in China, is in fact a serious threat to the health of children, and it is very important to strengthen the prevention and treatment of this disease. If in daily life, parents find that their children show symptoms of childhood pneumonia, they should take them to the hospital for examination and treatment immediately. Due to the diverse causes of childhood pneumonia and the complexity of its treatment, parents should not use medication on their own to deal with it. The purpose of this article is to explore the symptoms of childhood pneumonia and common treatment methods to provide relevant knowledge interpretation for children with pneumonia.

Keywords: Childhood pneumonia; Symptoms; Treatment

Introduction

Pediatric pneumonia is a common respiratory disease in children (especially infants and young children under 3 years of age) that occurs in all seasons, mainly in spring and winter. If pediatric pneumonia occurs, the child will feel very uncomfortable, fever, cough, shortness of breath and other symptoms, if the treatment is not complete, will seriously jeopardize the child's health. Pediatric pneumonia should be dealt with in a positive way by early detection and early treatment. Generally speaking, as long as parents pay attention to their children's living habits and mental state, they can detect pediatric pneumonia early and immediately nip it in the bud.

1. Symptoms of Pneumonia in Children

1.1 Shortness of Breath

Pneumonia is one of the most common forms of lung infection, in which the pathogen infects the tissues of the lungs, thus causing inflammation of the lungs and leading to the symptoms of shortness of breath in children. When the condition of pneumonia in children further deteriorates, the inflammation can lead to narrowing of the fine bronchial tubes in the lungs and poor alveolar inflation, which can lead to symptoms such as dyspnea and shortness of breath in children[1]. Some children experience severe shortness of breath when coughing. This is because coughing due to lung infections and bronchitis causes the lung tissues of the child to become very sensitive to the increased demands of respiratory movements, which indirectly

leads to shortness of breath.

1.2 Cough

Cough in children with pneumonia can be divided into two types: dry cough and wet cough. Dry cough is often accompanied by an irritating cough, and children are often unable to cough up sputum, which is due to viral infection and localized irritation of the airway mucosal nerve endings due to inflammation. A wet cough, on the other hand, is a dry cough with thicker sputum, usually due to a bacterial infection. The degree of coughing symptoms in children with pneumonia varies, and may range from a mild dry cough that can worsen to a severe cough or even a choking cough. The duration of the cough may also vary, with some children coughing until their mouths become dry, which interferes with sleep and daily life. Coughing may also lead to chest tightness, shortness of breath and other discomforts, and in severe cases, excessive coughing may even cause respiratory distress and other emergencies, requiring prompt medical treatment.

1.3 Fever

Fever is an important manifestation of pneumonia in children, which usually appears in the early stage of the disease and worsens as the disease progresses, especially pneumonia caused by bacterial infection is more likely to cause fever. Children's pneumonia is a lung infection caused by pathogens, which are categorized into viruses, bacteria, fungi and so on[2]. And pathogens enter the human body, will cause the body's immune system is highly sensitive, quickly produce a series of physiological responses, which fever is a stress response of the body. The significance of fever is to remind the body of an abnormal situation, and the body is releasing various antigenic substances in response to pathogens. In response to the immune cells, the body temperature rises, causing symptoms such as discomfort and fatigue.

Pneumonia in children due to a bacterial infection typically has a more severe fever than that caused by a viral infection. Common pathogens of bacterial infections include Streptococcus pneumoniae and Haemophilus influenzae. Fever in children with pneumonia due to viral infections is usually not as high and is milder. Common viral pathogens include influenza virus and respiratory syncytial virus. A few parasitic infections can also cause childhood pneumonia, such as Schistosoma pneumoniae, which may lead to symptoms of high fever. Including allergies and inhalation of pollutants can also lead to pneumonia in children.

1.4 Shortness of Breath

Under normal circumstances, children breathe naturally and smoothly, but when children are infected with pneumonia viruses or bacteria, the inflammatory response in the lungs can lead to airway obstruction or lung tissue damage, which can cause children to experience symptoms of shortness of breath. Shortness of breath is a phenomenon in which a child's breathing is noticeably frequent, rapid or difficult, or even wheezing. This symptom occurs in children with pneumonia and is often accompanied by coughing and fever. Shortness of breath is one of the common manifestations in children with pneumonia. The child may feel a marked increase in breathing and hormonal secretion during rest or exercise. This manifestation of shortness of breath is due to inflammation of the alveoli and bronchial tubes as the lungs are attacked by pathogens, causing shortness of breath. Asthma caused by climate change or infection with an upper respiratory virus can lead to symptoms of wheezing in children. Wheezing from pneumonia in children is usually caused by bronchospasm or inflammation of the lungs. When shortness of breath is severe, it can cause a lack of oxygen supply, leading to symptoms such as panic, dizziness, and purple lips. Severe airway narrowing can also lead to a lack of oxygen to the child's body, causing nausea and vomiting.

1.5 Loss of Appetite

Pneumonia in children is a kind of lung infection disease caused by pathogens, which will cause inflammation of bronchial tubes and alveoli, resulting in alveolar gas exchange being affected, which further affects the normal functioning of various organs in the body. Among them, the function of the gastrointestinal tract is no exception. In children with pneumonia, the child is prone to loss of appetite due to the effects of high fever, cough, and shortness of breath [3]. In addition, pneumonia in children leads to increased water and energy depletion in the body, resulting in a lack of energy and appetite. In the early stage of pneumonia, children may experience discomfort such as dry mouth, thirst, sore throat, and fatigue, and can't work up an appetite. And after further development

of pneumonia, children may also experience diarrhea, vomiting and indigestion.

1.6 Difficulty in Breathing

Symptoms of dyspnea may not be obvious in the early stage or mild condition of pneumonia in children, but as the condition worsens, the symptoms of dyspnea will gradually worsen [4]. One of the characteristics of dyspnea is that the breathing is too fast and shallow, and the child needs more force and time to take in enough oxygen when breathing. As a result, the child's respiratory rate is significantly increased and symptoms of shortness of breath and tachypnea occur. The child needs to breathe as hard as he or she can because of the difficulty in breathing, and the breaths are very shallow and short. In this case, the child feels very tired and weak.

1.7 Fatigue

Normally, children should have more energy, but when a child is infected with the pneumonia virus or bacteria, the body rationalizes its energy distribution to cope with the disease, resulting in malaise, weakness, and lack of energy. Malaise means that the child feels very tired or weak, even without physical activity. The affected person usually feels very tired and this feeling is difficult to relieve no matter how long he or she rests. The child's muscles are weak and their ability to move is significantly reduced. The child also usually shows a strong need for sleep and tends to fall asleep during the day, or sleeps for significantly longer periods of time. Affected children show low mood and mood swings, as if nothing has been done. Lethargy is one of the manifestations of the pneumonia condition, and parents and schools should be on the lookout for changes in a child's physical strength. If the child feels suddenly become lethargic recently, such as unwilling to play or play time is reduced, and on the other hand, he/she always feels tired, then parents should pay more attention to his/her physical condition, pay attention to the quality of the child's sleep and dietary nutrition, to avoid further aggravation of the degree of physical fatigue due to the pneumonia condition, and go to the hospital in a timely manner for medical treatment.

2. Children's Pneumonia Treatment

2.1 Drug Treatment

Children's pneumonia medication mainly includes the use of antibiotics, anti-inflammatory drugs, antipyretics, antipyretics, cough medicine and other drugs. Different types of pneumonia require the use of different drugs, and the type and dosage of drugs need to be based on the specific conditions of children. Pneumonia caused by bacterial infections is primarily treated with antibiotics. Broad-spectrum antibiotics, such as penicillin and cephalosporin, are usually used until the type of infection is determined in order to cover a wide range of bacteria and to inhibit the progression of the infection in a timely manner. Once the type of bacteria is determined, narrow-spectrum antibiotics, such as azithromycin and clindamycin, can be targeted for treatment. The course and dosage of antibiotics should follow the doctor's advice, and should not be adjusted or discontinued on one's own. For viral pneumonia, antibiotics have no obvious efficacy. In this case, it is necessary to use appropriate anti-inflammatory drugs and fever-reducing drugs and other auxiliary treatment to relieve the symptoms of the disease. Common anti-inflammatory drugs include Yinqiao powder and Isatidis root, which can effectively inhibit the activity of the virus and symptomatically treat the symptoms of the disease. Antipyretics and antipyretics generally reduce the elevated body temperature of patients with childhood pneumonia and relieve symptoms such as febrile seizures and headaches. Commonly used antipyretics include acetaminophen and antipyretics include ibuprofen. The dosage and duration of these medications should follow your doctor's instructions, and parents should not use them on their own. For children with coughing symptoms of pneumonia, also need to use the appropriate cough medication for treatment, in order to relieve the child's cough. Commonly used cough medications include Ambroxol oral solution, Lotus cough syrup, etc. Parents need to follow the doctor's instructions on the dosage of these medications when using them. In conclusion, the method of children's pneumonia medication needs to be diagnosed and treated by a professional doctor according to the type of condition and the individual situation of the child, parents should not use the medication or change the dosage of the medication and the treatment by themselves. Meanwhile, parents should also provide sufficient diet and rest to help children recover as soon as possible.

2.2 Physical Therapy

Pneumonia in children is one of the common lung

diseases in children, and the condition is often characterized by fever, cough and shortness of breath, which may lead to respiratory distress or lung infection in severe cases. In the process of treating pneumonia, physical therapy is a very important means of treatment.

Massage is a physical means to relieve muscle fatigue, promote blood circulation and accelerate metabolism, which also plays an important role in the treatment of pneumonia in children. Massage can help children accelerate blood circulation, promote the discharge of phlegm and the recovery of respiratory function. Massage method is relatively simple, parents can use the child lying flat on the bed, and then use the hands to gently rub, push, massage the back, chest, ribs and other parts. The massage should last for 15-20 minutes and can usually be done before or after breakfast and dinner.

Back patting is a commonly used physical therapy for pneumonia in children, which promotes the coughing up of phlegm by patting the child's back. The principle of back patting is to make the phlegm cough out of the lungs easily through shock and vibration, so as to clear the phlegm and improve the respiratory tract. The method of back patting is relatively simple, usually let the child take off his shirt, turn his face over and lie down on a soft object such as a sponge cushion, and let the parents or nurses pat the child's back gently with a flat palm (attention should be paid to gentle, avoiding too strong patting of the back to cause discomfort to the child's body). The duration of the patting is usually no more than 15 minutes, and is performed two to three times at 10-15 minute intervals.

Tremolo is a physical therapy that improves the ability to drain sputum from the lungs and the nature of airflow dynamics. By using high-frequency vibration to produce an intermittent fluctuating effect, tremolo stimulates the cough reflex, accelerates airflow and promotes phlegm coughing up and transfer to achieve the effect of removing phlegm. The method of vibrato generally involves the use of a vibrato machine or customized vibrato tubing at a frequency of approximately 10-20 Hz. The child's oropharynx is held in a flexed position while oxygen is delivered using a nasal oxygen tube or mask for a period of time lasting 5-10 minutes at a time.

2.3 Oxidation

Oxygen therapy refers to the provision of additional oxygen to the child by artificial means in order to supplement the lack of oxygen in the blood and seek to restore the normal metabolism of the body. Oxygen therapy is widely used in children with severe pneumonia, especially respiratory failure, as it not only gives the child enough oxygen, but also helps to eliminate pathogens and treat the symptoms of pneumonia. Low-flow oxygen therapy is used when relatively mild symptoms of pneumonia are present, such as mild shortness of breath. In this case, the oxygen concentration is usually between 24% and 35% and the flow rate can be between 2 and 4 liters per minute. Low-flow oxygen therapy usually uses a nasal cannula approach to assist the child in inhaling oxygen. High-flow oxygen therapy is used when the symptoms of pneumonia worsen or when the shortness of breath is severe. Oxygen concentrations can usually be as high as 100%, with flow rates ranging from 4 to 10 liters per minute. High-flow oxygen therapy improves the ability of the child's respiratory tract to fight off pathogens by strengthening the lungs with oxygen, leading to a rapid recovery. Noninvasive ventilation therapy is an increasingly popular treatment for children who have pneumonia and are experiencing respiratory failure. This form of oxygen therapy uses a mask or inter-nasal patch ventilator, eliminating the need to insert a trachea, and is superior to oxygen-supplied methods of treatment. The main role of non-invasive ventilation therapy is to assist the child's breathing, improve gas exchange in the lungs, and improve therapeutic outcomes.

2.4 Respiratory Therapy

The respiratory treatment of children's pneumonia mainly focuses on the respiratory difficulties and insufficient oxygen caused by children's pneumonia, and achieves the therapeutic purpose by increasing the amount of oxygen supply and assisting respiration. Conventional respiratory treatments include inhaled oxygen, ventilator-assisted respiration, bronchodilator inhalation and so on. Children with pneumonia need additional oxygen support to ensure the body's oxygen supply due to a compromised respiratory system. Oxygen can be delivered to the lungs through devices such as masks and nasal cannulas to stabilize oxygen saturation, thus speeding up treatment, strengthening the patient's ability to fight off viruses, and also relieving uncomfortable symptoms caused by hypoxia. In severe cases of pneumonia in children, ventilator-

assisted respiratory therapy may be necessary. Ventilators provide oxygen and airflow artificially, replacing the patient's normal lung function and increasing air exchange and dialysis in the lungs, thus improving lung function and blood oxygen levels, allowing the lungs to purify and remove harmful substances more quickly. This treatment should be administered under the supervision of a medical professional. When children's pneumonia leads to bronchospasm and dyspnea, or when there are children with a history of combined asthma, they can be treated with bronchodilators to promote airway patency, reduce respiratory resistance, and increase the ventilation capacity of the lungs so as to improve the respiratory situation.

2.5 Nutritional Support

In the process of treating pneumonia, the child's body needs sufficient water to maintain the normal metabolism of the body. When the child has a fever, he/she will likely sweat a lot, which will cause him/her to lose a lot of water. Therefore, the child needs to be provided with enough water to replace the water lost from the body. Give your child lukewarm or cold hot water and do not give them drinks that are too sweet or too cold. Your child can also try foods that are high in water content, such as watermelon and bananas. Protein is one of the nutrients children need during recovery. Protein assists the body in repairing and metabolizing the damaged tissues produced. Therefore, increasing your child's protein intake can help them recover faster. Foods contain a lot of protein, such as chicken, fish, dairy products and beans. However, your child may not like these foods. To make your child more willing to eat, you can choose nutritious snacks, such as cookies and milk that contain high amounts of protein. Vitamins are one of the essential nutrients that can boost your child's immunity and help the body cope with the infection better.

2.6 Symptomatic Treatment

If pneumonia in children is caused by a bacterial infection, antibiotics are a necessary treatment. When choosing antibiotics, doctors will select the right antibiotics according to the different conditions of the child and the resistance of the bacteria. Commonly used antibiotics include cephalosporins, penicillins and macrolides. When using antibiotics, parents should take them according to the doctor's prescription or instructions, and should not stop or overdose on their own. Pneumonia in children is often accompanied by symptoms such as fever and cough, and these symptoms can affect the child's normal life and sleep. In this case, parents can take some measures to relieve their children's pain. For example, cooperate with the doctor's instructions and use some antipyretic and analgesic medicines to treat symptoms such as fever, headache, cough and fatigue. When using medicines, the dosage should be used strictly in accordance with the instructions, and do not overuse them. Children with pneumonia need sufficient rest when their condition worsens, which helps to promote the body's immune system to strengthen. While resting, parents should also cooperate with the doctor's treatment, keep the indoor air fresh, avoid indoor dryness, and increase water intake.

The correct treatment needs to be determined by the specific condition of the child. Therefore, parents should pay attention to their children's health conditions and conduct timely medical checkups for their children to avoid childhood pneumonia. And after the child's diagnosis, parents should actively assist the doctor's treatment, carry out the medical instructions, care for the child's physical recovery, and promote the child's early recovery and return to a healthy life.

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