



## Bronchiolitis and respiratory pneumonia virus: A review

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### Abstract

Bronchiolitis is characterized by bronchial epithelium necrosis, caused by the virus, increased mucus secretion and cellular infiltration and edema under the mucosa. These changes result in the formation of bronchial obstructive mucosal aggregates and the subsequent collapse of the distal lung tissue. In pneumonia, infiltration is more extensive and the epithelial necrosis may spread to both the bronchi and the alveoli. Due to the small size of the bronchioles, the infants are particularly prone to the obstruction of small airways. Many of the facts of the RSV immunological impairment are probably a factor in the pathogenesis of bronchiolitis due to free solution of RSV (interleukins, leukotrienes, etc.) with potential for inflammation and tissue destruction during infection. RSV contains symptoms of choriza and runny nose and pharyngitis. Coughing may be the first symptoms of an infection in a child at the same time. Shortly after coughing, the baby is suffering from wheezing and chest pain. If the disease is mild, symptoms may not go beyond this stage; subtle quiver of voice and wheezing might be heard out of the lungs of the infected baby. With a different degree of certainty, RSV is a clinical diagnosis of bronchiolitis. The suspicion of developing the disease is based on the basis of the clinical picture, season and the presence of a typical outbreak of the disease at that time. An epidemiologic characteristic is commonly found in older children and other beneficial RSVs are the presence of cold in older members of the family, as they infect adults and cause symptoms. In most cases, bronchiolitis or pneumonia caused by routine tests provide very little useful information. The normal white blood cell count is RSV, and the bacterial culture of the pharynx grows in the pharynx.

**Keywords:** bronchiolitis, respiratory, pneumonia

### Introduction: Pathogenesis

Bronchiolitis is characterized by bronchial epithelium necrosis, caused by the virus, increased mucus secretion and cellular infiltration and edema under the mucosa. These changes result in the formation of bronchial obstructive mucosal aggregates and the subsequent collapse of the distal lung tissue. In pneumonia, infiltration is more extensive and the epithelial necrosis may spread to both the bronchi and the alveoli<sup>[1]</sup>. Due to the small size of the bronchioles, the infants are particularly prone to the obstruction of small airways. Many of the facts of the RSV immunological impairment are probably a factor in the pathogenesis of bronchiolitis due to free solution of RSV (interleukins, leukotrienes, etc.) with potential for inflammation and tissue destruction during infection<sup>[2]</sup>. Many children experience recurrence of visceral bronchiolitis, and it seems that specific signs found during the acute period, especially the presence of eosinophils and eosinophilic cationic proteins in the blood, are associated with these alleviations. The pathogenic role of bacterial infections in lowering respiratory tract is unclear. The current point is that RSV bronchiolitis is a viral disease in infants, and bacteria are of little importance even when pneumonia is induced by ATL or RSV<sup>[3]</sup>.

### Clinical symptoms

RSV contains symptoms of choriza and runny nose and pharyngitis. Coughing may be the first symptoms of an infection in a child at the same time. Shortly after coughing, the baby is suffering from wheezing and chest pain. If the disease is mild, symptoms may not go beyond this stage;

subtle quiver of voice and wheezing might be heard out of the lungs of the infected baby<sup>[4]</sup>. Having a clearly runny nose remains painful throughout the disease. Chest rhythms are usually normal at this stage. As the disease progresses, the cough and wheezing increase, followed by increased respiratory rate (tachypnea). There might be Retraction (interdigital or subordinate, excessive chest distension), restlessness and cyanosis. Symptoms of severe life-threatening form of this disease include cyanosis, tachypnea, neoplasm and apnea attacks. At this stage, the chest may be very dilapidated and almost silent due to poor circulation<sup>[5]</sup>; 20-40% of cases of excessive chest distension are evident in RSV chest x-rays in children with bronchiolitis. Perforalgin thickening or pneumonia is seen in 30-50% of cases, and segmental or lobar trauma occurs in 20-8% of cases. Pleural effusion is rare<sup>[6]</sup>. In some children, the course of the disease may be more like a pneumonia that begins with a choriza and runny nose and coughing, followed by dilatation of breathing dispensing, poor nutrition and attenuation, and a slight increase in wheezing and chest distension. In this case, clinical diagnosis is pneumonia. Wheezing often occurs alternately, and chest radiographs may indicate air rupture. RSVs become quite indicative in hosts with severe immunosuppression. Infections of RSV Fever is an unspecified symptom in a recurrent infection. Blood transplantation or RSV members may be severe at any age. The mortality rate with solid pneumonia is 50% or more<sup>[7]</sup>. The RSV has roughly symptoms similar to lower ages; initially, there might be mild symptoms of the upper respiratory tract in the upper reaches of children, such as sneezing and runny nose; consequently,

fever and respiratory distress are caused by coughing. The fever decreases through time and older children would less frequently get hospitalized. Mild ralph and wheezing are predominantly the same in older and younger children <sup>[8]</sup>.

### Diagnosis

With a different degree of certainty, RSV is a clinical diagnosis of bronchiolitis. The suspicion of developing the disease is based on the basis of the clinical picture, season and the presence of a typical outbreak of the disease at that time. An epidemiologic characteristic is commonly found in older children and other beneficial RSVs are the presence of cold in older members of the family, as they infect adults and cause symptoms. In most cases, bronchiolitis or pneumonia caused by routine tests provide very little useful information. The normal white blood cell count is RSV, and the bacterial culture of the pharynx grows in the pharynx <sup>[9]</sup>. A definitive respiratory diagnosis is made when bronchiolitis is clinically mild or when there is no infiltration graph, because there is little chance of having a bacterial cause based on virus detection or identification of the virus components in RSV secretions. A mucosal aspiration or nasopharyngeal rinsing from the posterior nasal cavity is the best example, but a subtle, fungal swab is also acceptable. The specimen should be placed on a freezer directly into the laboratory and processed to detect antigen <sup>[10]</sup>. There are different methods, including direct and indirect, or (Reverse Transcriptase-Polymerase Chain Reaction (RT-PCR) and Enzyme Immunoassay (EIA), for the diagnosis of RSV. IFA is a costly method and RT-PCR is more frequently conducted in laboratories, because it is mainly used for research-purposed orientation and presents more sensitivity in comparison with other methods <sup>[11]</sup>.

### Treatment

Treatment is symptomatic in uncomplicated cases of bronchiolitis. Wet oxygen is usually indicated for infants infected. Many children are mildly or moderately infected; thus, fluids should be carefully and sufficiently, a little more than the prescribed value, fed to them. When sucking or eating is difficult because of tachypnea, intravenous feeding is often helpful. Providing injectable epinephrine or aerosol may help improve the wheezing and clinical condition, and should be repeated if initially useful. Corticosteroids do not have indicators. In most cases, antibiotics are not helpful and should be blinded to bronchiolitis and viral pneumonia <sup>[12]</sup>. An antiviral drug, Ribavirin, is given by the aerosol with oxygen in patients whose disease has lasted between 12-20 days; this drug is prescribed for 3-5 days and it has beneficial effects on the course of pneumonia.

### Prognosis

The lower respiratory tract is about 1%. RSV occurs in infants hospitalized for infection and those suffering from any form of neuromuscular, pulmonary, cardiovascular or immunological conditions. Many children with asthma have a history of bronchiolitis in infancy <sup>[13]</sup>. Wheezing is quite recurrent. RSV becomes increasingly possible in 33-50% of infants with typical bronchiolitis or in patients with bronchiolitis aged more than one year. Although this attack may have been

caused by the virus, it may be the first of several attacks that later became known as Asthma, which accompanies RSV with a mortality rate of 50%. Such symptoms indicate pneumonia in patients with severe immunosuppression or deficiency <sup>[14]</sup>.

### Prevention

The most important preventive measures should be taken to prevent hospital transmission. During the high risk infant season, infants with respiratory symptoms should be separated. Separate goggles and gloves and RSV Hand Care precautions should be used to care for all infants with suspected or proven infections <sup>[15]</sup>.

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