Respiratory Syncytial Virus (RSV) Assessment

RSV, or respiratory syncytial virus, is a viral infection that infects upper airway epithelial cells, leading to copious secretions, coughing, sneezing and wheezing in patients. It primarily affects infants and young children with peak incidence between 2 to 7 months of age. It affects more male than female infants; occurs less frequently in breast-fed infants; and has a peak incidence during winter and spring. Most cases of bronchiolitis are caused by RSV.

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Mechanism

Viral Infection Affecting Epithelial Cells

Virus attacking Epithelial Cell

RSV is a major respiratory pathogen in infants that infects the airway epithelial cells. Obstruction with mucus and dilation of bronchial passages on inspiration allows sufficient space for intake of air, but narrowing of the passages on expiration prevents air from leaving the lungs, leaving air trapped distal to the obstruction and causes progressive overinflation (emphysema).

Signs and Symptoms

Begins After a Upper Respiratory Infection

Begins After Leaving Upper Respiratory Tract Infection

RSV usually occurs after an upper respiratory infection, or cold-like symptoms. Symptoms like runny nose, minor cough and low fever may progress into the more severe symptoms seen in RSV.

Copious Secretions

Copious-cops with Secretions

The bronchiolitis that is caused by RSV leads to production of copious secretions. Patients develop thick mucus that occludes the bronchiole tubes and small bronchi.

Coughing and Sneezing

Coughing Coffee-pot and Sneezing

RSV initially begins with cough and sneezing. This can progress to increased, labored breathing and productive coughing and sneezing. This intense coughing and sneezing can lead to periods of cyanosis and signs of air hunger. Coughing and sneezing helps spread the virus, which is transmitted via large droplets.

Wheezing

Weasel

Wheezing is an initial symptom of RSV, but intensifies in infants as the infection progresses. Wheezing is more noticeable in the infant as the infection gets worse, and may lead to periods of cyanosis and signs of air hunger.

Otitis Media or Conjunctivitis (Possible Ear or Eye Drainage)

Oats out of Ear and Convict-eye-on-fire

Acute otitis media is the most common co-infection of RSV bronchiolitis, and infants can develop middle ear drainage. Furthermore, RSV can infect the conjunctival epithelium leading to allergic conjunctivitis.

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Poor Feeding

Baby Throwing Away Bottle

Infants with RSV are irritable and display poor feeding. Often, they display less than 50% of usual intake over the previous 24 hours. Parents and caregivers should be aware of the infant's nutritional status.

Tachypnea

Tac-P-lungs

As RSV progresses, the infant will display tachypnea and retractions. Breathing is very difficult for these infants, as their bronchioles and small bronchi are obstructed with secretions.

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