

General Information

- What is bronchiolitis?
 - Bronchiolitis is a lower respiratory tract infection triggered by a virus. Respiratory syncytial virus (RSV) is the most common cause of bronchiolitis. Other viruses that can trigger bronchiolitis include adenovirus, coronavirus, human metapneumovirus, human rhinovirus, influenza, and parainfluenza.
- Are there different types of RSV?
 - There are different strains of RSV that are differentiated by the severity of illness. At CHOC, we currently test for RSV only and not the different strains.
- What are the signs and symptoms of bronchiolitis?
 - Bronchiolitis is associated with inflammation of the epithelial cells lining the bronchioles. Signs and symptoms include cough, rhinitis, rales, wheezing, and increased respiratory effort as evidenced by tachypnea, increased accessory and abdominal muscle use, grunting, and/or nasal flaring.

Diagnosis and Treatment

- How is bronchiolitis diagnosed?
 - Bronchiolitis is typically diagnosed through a thorough history and physical. Viral respiratory panels (VRP) and polymerase chain reaction (PCR) assays can aid in identifying the virus that triggered the bronchiolitis. These tests (including chest x-rays) will not change the course of treatment and are therefore not supported within the literature.
- How is bronchiolitis treated?
 - Supportive care including adequate hydration, oxygenation, and maintaining an open nasopharynx through suctioning is supported by the literature. Antibiotics, bronchodilator medications (i.e. Albuterol), chest physiotherapy (CPT), and corticosteroids are not supported. In some studies, nebulized hypertonic saline was found to be effective; however, the quality of evidence is weak.
- Should deep nasal suctioning be done on patients admitted with bronchiolitis?
 - The most effective means of suctioning should be considered; however, suctioning should first be performed by the least invasive means. For instance, attempt to clear the nasal passages with a bulb suction. If unsuccessful, attempt using a nasal tip aspirator. If additional suctioning is required, nasopharyngeal suction with a catheter can be attempted.
- Which monitor should be ordered for a patient with bronchiolitis?
 - Continuous pulse oximetry is typically ordered for patients admitted with bronchiolitis. When respiratory distress is resolved and the patient is stable on room air, a patient should be transitioned from continuous pulse oximetry to pulse oximetry spot checks (ORDER REQUIRED). AB monitoring (ORDER REQUIRED) should only be considered for patients less than three months of age and patients with a history of prematurity and/or chronic underlying conditions.

High Flow Nasal Cannula (HFNC)

- Why is HFNC commonly utilized on patients with bronchiolitis?
 - HFNC can improve both oxygenation and respiratory effort in patients with bronchiolitis.
- When on HFNC, can a patient PO feeds?
 - All PO feeds should be held on patients that present with an increase work of breathing. If a patient is stable on HFNC, PO feeds can either be initiated or continued. There is limited evidence to support that patients on HFNC are at an increased risk of aspirating.
- When is it appropriate to wean HFNC? And how often should HFNC be weaned?
 - Weaning of HFNC should be dependent on a patient's oxygenation and work of breathing. There are no guidelines on how often HFNC should be weaned.
- When should a patient on HFNC be transferred to the PICU?
 - Within the literature, there are no set parameters to determine when a patient on HFNC should be admitted to a critical care unit. Most HFNC parameters are established by an organization to function as a guide to determine the best placement for a patient. Parameters alone should not determine whether a patient should be transferred to a higher level of care. The clinical presentation of the patient (i.e. vital signs, work of breathing, etc.) should be considered when potential transfers are discussed.
- Should all patients that are above the floor HFNC parameters be made a watcher?
 - If a patient is on settings higher than the recommended parameters, a risk mitigation plan should be considered. If a patient is placed on a risk mitigation plan and the established goals are met, the patient can be removed from the watcher status regardless of the HFNC settings.

Isolation Precautions

- What happens if a patient with bronchiolitis has tested positive for multiple viruses and/or also has a secondary diagnosis (i.e. pneumonia)?
 - Patient placement should be made based upon similar symptoms and diagnoses.

References

- American Lung Association. (2020). Learn about respiratory syncytial virus (RSV). Retrieved from <https://www.lung.org/lung-health-and-diseases/lung-disease-lookup/rsv/learn-about-respiratory.html>.
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