# Bronchiolitis

## *Executive summary*

## Introduction

Bronchiolitis is a common viral infection that affects infants from birth to 2 years old but seen mostly in those less than 6 months old. They present with persistent cough, wheeze and varying degrees of respiratory distress. Fever, poor feeding and irritability is a common presentation. Bronchiolitis is a clinical diagnosis. No investigation is required. Those with severe respiratory distress with/and poor feeding and dehydration should be admitted. Management is supportive and minimal handling is recommended. Oxygen therapy, suctioning and nasogastric tube feeding should be given when required. Chest x-rays, blood investigations, antibiotics and nebulisations are not recommended. Oxygen saturations, respiratory rates and efforts should be monitored.

## Target users

* Doctors
* Nurses

## Target area of use

* Outpatient department
* Ward

## Key areas of focus / New additions / Changes

This guideline addresses the diagnosis and management of bronchiolitis.

## Limitations

Respiratory support via mechanical ventilation is not available in our setting.

## Presenting symptoms and signs

Bronchiolitis typically begins with an acute upper respiratory tract infection lasting 1 to 3 days followed by

* Persistent cough
* Tachypnoea or chest recessions (or both)
* Wheeze or crackles on chest auscultations (or both).

It may also present with

* Fever (may be present but usually less than 39 OC)
* Poor feeding
* Increasing coryza and congestion
* Irritability
* Cyanosis
* Apnoea may be the first presentation and this tends to occur in infants under 6 weeks of age.

Symptoms usually peak between 3 and 5 days and cough resolves in 90% of infants within 3 weeks.

Bronchiolitis is a clinical diagnosis based on typical history and examination.

## Differential diagnosis

1. **Pneumonia:** consider this if the infant has
   * high fever (over 39 OC ) and/or
   * persistently focal crackles
2. **Viral-induced wheeze or early-onset-asthma**: consider in infants with
   * persistent wheeze without crackles
   * recurrent episodic wheeze
   * a personal or family history of atopy

Other differential diagnoses include:

* Cardiac disease/ congenital heart disease
* Croup
* Aspiration syndromes
* Gastroesophageal reflux
* Tracheal ring
* Vascular ring
* Branchial cleft cyst
* Bronchomalacia.

## Investigations

In most children with bronchiolitis no investigations are required, therefore investigations should only be undertaken when there is diagnostic uncertainty eg cardiac murmur with signs of congestive cardiac failure.

* Chest X-ray is not routinely indicated and may lead to unnecessary treatment with antibiotics**.**
* Blood tests (including blood gas, full blood count (FBC), blood cultures) have no role in management**.**
* Virological testing (nasopharyngeal swab or aspirate) has no role in management of individual patients**.**

## Management

Management is directed towards **symptomatic relief**. Apart from oxygen, no pharmacological therapy is proven to change the course of bronchiolitis. Thus medications should be avoided.

In management of bronchiolitis do **not** give the following:

* Antibiotics
* Hypertonic saline
* Salbutamol
* Systemic or inhaled corticosteroids
* Chest physiotherapy (except in children with underlying respiratory conditions).

Admit to the ward if a child has any of the following:

* Apnoea (observed or reported)
* Persistent oxygen saturation of less than 92% in room air
* Inadequate oral fluid intake
* Clinically dehydrated
* Severe respiratory distress eg grunting, marked chest recession, respiratory rates above 70 breaths/minute.

Risk factors for more serious illness include:

* Chronological age at presentation less than 10 weeks
* Chronic lung disease
* Congenital heart disease
* Chronic neurological conditions
* Immunodeficiency**.**

Suspect impending respiratory failure if any of the following are present:

* signs of exhaustion, for example listlessness or decreased respiratory effort
* recurrent apnoea
* failure to maintain adequate oxygen saturation despite oxygen supplementation.

Supportive care for patients with bronchiolitis may include the following:

* **Supplemental (humidified) oxygen:** consider CPAP in impending respiratory failure.
* **Ensure adequate hydration**: give fluids by nasogastric tube if they cannot take enough by mouth.
* Give **intravenous isotonic fluids** to children who do not tolerate nasogastric fluids or have impending respiratory failure.
* **Nasal and oral suctioning** in children who have respiratory distress or feeding difficulties because of upper airway secretions and children who have apnoea.
* Apnoea and cardiorespiratory monitoring.
* Mechanical ventilation in respiratory failure.

## Key Issues for Nursing care

Minimal handling is recommended in the care of children with bronchiolitis. Oxygen saturation and respiratory rate and efforts and able to tolerate oral feeds should be monitored closely to enable timely escalation or weaning oxygen therapy. Very young children with bronchiolitis are at risk of apnoea and this should be looked out for.

## References

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