

VIRAL BRONCHIOLITIS

Aetiology and Epidemiology

- a common respiratory illness especially in infants aged 1 to 6 months old
- Respiratory Syncytial Virus (RSV) remains the commonest cause of acute bronchiolitis in Malaysia
- although it is endemic throughout the year, cyclical periodicity with annual peaks occur, in the months of November, December and January.

Clinical Features

- typically presents with a mild coryza, low grade fever and cough
- tachypnoea, chest wall recession, wheeze and respiratory distress subsequently develop. The chest may be hyperinflated and auscultation usually reveals fine crepitations and sometimes rhonchi.
- a majority of children with viral bronchiolitis has mild illness and about 1% of these children require hospital admission

Table 1. Guideline for hospital admission in viral bronchiolitis

	Home Management	Hospital management
Age < than 3 months	No	Yes
Toxic – looking	No	Yes
Chest recession	Mild	Moderate/Severe
Central cyanosis	No	Yes
Wheeze	Yes	Yes
Creptitations on auscultation	Yes	Yes
Feeding	Well	Difficult
Apnoea	No	Yes
Oxygen saturation	>95%	<93%
High risk group	No	Yes

Chest X-ray

- a wide range of radiological changes are seen in viral bronchiolitis;
 - hyperinflation (most common)
 - segmental
 - lobar collapse/consolidation
- a chest X-ray is *not routinely required*, but recommended for children with:
 - severe respiratory distress
 - unusual clinical features
 - an underlying cardiac or chronic respiratory disorder
 - admission to intensive care

Management

General measures

- careful assessment of the respiratory status and oxygenation is critical
- arterial oxygenation by pulse oximetry (SpO₂) should be performed at presentation and maintained above 93%
 - administer supplemental humidified oxygen if necessary
- monitor for signs of impending respiratory failure:
 - inability to maintain satisfactory SpO₂ on inspired oxygen > 40%, or a rising pCO₂
- very young infants are at risk of apnoea require greater vigilance

Nutrition and Fluid therapy

- **Feeding.** Infants admitted with viral bronchiolitis frequently have poor feeding, are at risk of aspiration and may be dehydrated. Small frequent feeds as tolerated can be allowed in children with moderate respiratory distress. Naso-gastric feeding, although not universally practiced, may be useful in these children who refuse to feed and also to empty the dilated stomach.
- **Intravenous fluids** for children with severe respiratory distress, cyanosis, apnoea. Fluid therapy should be restricted to maintenance requirement of 100 ml/kg/day for infants, in the absence of dehydration.

Pharmacotherapy

- **Inhaled β_2 -agonists.** Pooled data have indicated a modest clinical improvement with the use of β_2 -agonist. A trial of nebulised β_2 -agonist, given in oxygen, may be considered in infants with viral bronchiolitis. Vigilant and regular assessment of the child should be carried out if such a treatment is provided.
- **Inhaled steroids.** Randomised controlled trials of the use of inhaled steroids for treatment of viral bronchiolitis demonstrated no meaningful benefit.
- **Antibiotics** are recommended for all infants with
 - recurrent apnoea and circulatory impairment,
 - possibility of septicaemia
 - acute clinical deterioration
 - high white cell count
 - progressive infiltrative changes on chest radiograph.

CROUP

Aetiology and epidemiology

It is a clinical syndrome characterised by barking cough, inspiratory stridor, hoarse voice and respiratory distress of varying severity. It is the result of viral inflammation of the larynx, trachea and bronchi, hence the term laryngotracheobronchitis.

The most common pathogen is parainfluenza virus (74%), (types 1, 2 and 3).

The others are Respiratory Syncytial Virus, Influenza virus type A and B, Adenovirus, Enterovirus, Measles, Mumps and Rhinoviruses and rarely Mycoplasma pneumoniae and Corynebacterium Diphtheriae

Clinical Features

- low grade fever, cough and coryza for 12-72 hours, followed by
- increasingly bark-like cough and hoarseness
- stridor that may occur when excited, at rest or both
- respiratory distress of varying degree

Diagnosis

- croup is a *clinical diagnosis*. Studies show that it is safe to visualise the pharynx to exclude acute epiglottitis, retropharyngeal abscess etc. However, in severe croup, it is advisable to examine the pharynx under controlled conditions (ICU /OT)
- neck Radiograph is not necessary, unless the diagnosis is in doubt, such as in the exclusion of a foreign body.