CLINICAL ALERT
The bronchiolitis season is upon us – recommendations for the management and prevention of acute viral bronchiolitis

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Despite being so common, bronchiolitis remains poorly diagnosed and managed. This article is intended as an update on issues pertaining to this condition.


Definition
Bronchiolitis is a viral-induced lower respiratory tract infection that mainly occurs in children <1 year of age.

Causative organisms
The most frequent cause of severe bronchiolitis is respiratory syncytial virus (RSV). Other respiratory viruses are less common (paramyxovirus, human metapneumovirus, influenza virus, measles virus), or definitive attribution has yet to be established (e.g. rhinovirus, bocavirus and coronavirus).

Seasonality
In South Africa bronchiolitis peaks in the RSV season, which varies slightly by province. RSV circulation is evident from February through to June, before the influenza season (May - September).

Diagnosis
Clinical manifestations
Bronchiolitis is diagnosed on the basis of clinical signs and symptoms. In a young child, the clinical pattern of wheezing and hyperinflation is diagnostic and typically starts with an upper respiratory prodrome including rhinorrhea, low-grade fever, cough and poor feeding, followed 1 - 2 days later by tachypnoea, hyperinflation and wheeze as a consequence of airway inflammation and air trapping. The most reliable clinical feature of bronchiolitis is hyperinflation of the chest.

The illness is generally self-limiting but may progress to more severe disease.
Measurement of the peripheral arterial oxygen saturation is useful to indicate the need for supplemental oxygen. A saturation of <92% at sea level and <90% inland indicates that the child requires admission to hospital for supplemental oxygen.

Investigations
Chest X-rays are generally unhelpful and are not required in children with a clear clinical diagnosis of bronchiolitis. Haematological testing is not routinely required. Nasopharyngeal aspirates should not be routine, as viral testing adds little to routine management.

Management of bronchiolitis
Management is largely supportive. There is currently no proven effective therapy other than oxygen for hypoxic children (evidence A – well-designed randomised controlled clinical trial or diagnostic studies on relevant well-chosen populations), who can be given humidified low-flow oxygen (0.5 - 3 L/min) by nasal prongs. There is no evidence for routine use of antibiotics, nebulised agents (including bronchodilators, adrenaline, steroids or hypertonic saline), oral steroids, chest physiotherapy or montelukast (evidence A).

Prevention of RSV infection in high-risk children
Specific RSV monoclonal antibody, palivizumab, is available for children at particular risk of severe bronchiolitis (evidence A), as detailed below.
**Indications for palivizumab for children at high risk of severe bronchiolitis**

- Premature infants of gestational age <36 weeks at birth and younger than 6 months of age at the start of the RSV season. Prophylaxis should be continued until the end of the RSV season (last dose in May).
- Children of any gestation who are <24 months of age at the start of the RSV season with any of the following: chronic lung disease of prematurity, chronic lung disease, primary immunodeficiency, haemodynamically significant congenital heart disease.

*Note:* Based on seasonality, prophylaxis should be started in January. If available, palivizumab prophylaxis for high-risk premature infants should commence prior to discharge from hospital.

**Education**

Management of children with bronchiolitis requires that parents/caregivers be educated about the condition. This is particularly important in the case of children who are not admitted to hospital, but is also beneficial before a child is discharged from hospital. The key elements of an education message are listed below.

**Key elements of an education message for parents of children with bronchiolitis**

- The condition has a prodrome of an upper respiratory tract infection with low-grade fever.
- Symptoms are cough and wheeze, and often fast breathing.
- Bronchiolitis is caused by a virus; antibiotics are not needed.
- Bronchiolitis is usually self-limiting, although symptoms may occur for up to 4 weeks in some children.

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