

## CLINICAL ALERT

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

H J Zar, D A White, B Morrow, C Feldman, S Risenga, R Masekela, H Lewis, P Jeena, S A Madhi

*Prof. Heather Zar is Head of the Department of Paediatrics and Child Health, Faculty of Health Sciences, University of Cape Town, South Africa, and Director of the Medical Research Council Unit on Child and Adolescent Health, University of Cape Town; Dr Debbie White is a consultant paediatrician in the Department of Paediatrics and Child Health, Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, South Africa; Prof. Brenda Morrow is a physiotherapist and Associate Professor in the Department of Paediatrics and Child Health, Faculty of Health Sciences, University of Cape Town; Prof. Charles Feldman is head of the Division of Pulmonology, Department of Internal Medicine, Charlotte Maseke Johannesburg Academic Hospital and Faculty of Health Sciences, University of the Witwatersrand; Prof. Sam Risenga is Head of the Department of Pulmonology, University of Limpopo and Pietersberg Hospital, Limpopo, South Africa; Prof. Refiloe Masekela is Head of the Department of Paediatrics and Child Health, School of Clinical Medicine, College of Health Sciences, Nelson R Mandela School of Medicine, University of KwaZulu-Natal, Durban, South Africa; Prof. Humphrey Lewis is Honorary Professor in the Department of Paediatrics and Child Health, School of Medicine, Faculty of Health Sciences, University of Pretoria; Prof. Prakash Jeena is Associate Professor in the Department of Paediatrics and Child Health, School of Clinical Medicine, College of Health Sciences, Nelson R Mandela School of Medicine, University of KwaZulu-Natal; and Prof. Shabir Madhi is Executive Director of the National Institute for Communicable Diseases and MRC Respiratory and Meningeal Pathogens Research Unit, Faculty of Health Sciences, University of the Witwatersrand. The authors constitute the Management of Acute Viral Bronchiolitis Working Group of the South African Thoracic Society.*

**Corresponding author:** H J Zar ([heather.zar@uct.ac.za](mailto:heather.zar@uct.ac.za))

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

*S Afr Med J* 2015;105(7):525-526. DOI:10.7196/SAMJnew.8040



## 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 (parainfluenza virus, 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 rhinorrhoea, 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.

**Disclosures.** HJZ serves on the steering committee and was a speaker at the Global Experts meeting funded by Abbvie. SAM received honoraria from Medimmune and Abbott for an Advisory Board and Speakers' Bureau, respectively. DAW, BM, SR, HL and PJ served on an Advisory Board to Abbvie.

*Accepted 3 June 2015.*