

## Lower Respiratory Tract Infection in Children

### Lower Respiratory Tract Infection in Children

Lower respiratory tract infection is a common reason for referral to secondary care. This guideline is designed to aid healthcare professionals to manage children in the community without hospital admission wherever possible and to ensure that children who do need to be hospitalised are referred in a timely manner.

This guideline does not cover the management of children under 1 year old; the majority of these will have bronchiolitis and the specific bronchiolitis pathway should be followed.

#### Clinical Features

Bacterial pneumonia should be considered in children with persistent or repetitive fever greater than 38.5C together with signs of increased work of breathing and tachypnoea.

Chest signs on percussion and auscultation may be difficult to assess in children.

Wheeze is not often heard in bacterial LRTI.

#### Investigation

CXR is not required if there are clear symptoms and signs of LRTI.

Bloods are unhelpful in distinguishing bacterial and viral LRTI.

Microbiological investigations are not helpful for milder illness or those not requiring hospitalisation.

#### Severity Assessment

Refer urgently to paediatrics if evidence of any of:

- Decreased level of consciousness
- Stridor
- Tachypnoea
  - Age 1-4 respiratory rate over 70
  - Age over 4 respiratory rate over 50
- Increased work of breathing, central cyanosis or oxygen saturation less than 92%, grunting, intermittent apnoea
- Circulatory compromise (capillary refill >2 secs, cold peripheries, tachycardia out of proportion to fever)

Auscultation revealing absent breath sounds with a dull percussion note should raise the possibility of a pneumonia complicated by effusion and should

trigger a referral to hospital.

## **Management**

Families of children who are well enough to be cared for at home should be given information on managing fever, preventing dehydration and identifying any deterioration.

Chest physiotherapy is not beneficial and should not be performed in children with pneumonia.

All children with a clear clinical diagnosis of pneumonia should receive antibiotics as bacterial and viral pneumonia cannot reliably be distinguished from each other.

Children aged less than 2 years presenting with mild symptoms of lower respiratory tract infection do not usually have pneumonia and need not be treated with antibiotics, particularly if they have received pneumococcal vaccination. They should be reviewed if symptoms persist.

## **Choice of Antibiotics**

### **First line: amoxicillin (5 days)**

- Effective against the majority of pathogens (Streptococcus pneumoniae, Haemophilus influenzae, other Streptococci)
- Well tolerated
- Cheap

### ➤ **Penicillin allergic: clarithromycin**

### **Second line: Addition of (or change to) clarithromycin**

- Atypical cover (Legionella, Mycoplasma, Chlamydia)
- Macrolide sensitive Streptococcus pneumoniae, Haemophilus, Moraxella, S. aureus, Streptococci

### **Third line: co-amoxiclav OR cefaclor:**

- Broader spectrum of cover (beta-lactamase producing Haemophilus influenzae and Moraxella catarrhalis, Staphylococcus aureus)

In pneumonia associated with influenza, co-amoxiclav is recommended. Co-amoxiclav + macrolide is recommended as first line in severe pneumonia, but these children will be treated in hospital.

Antibiotics administered orally are safe and effective for children presenting with even severe CAP.

IV antibiotics should be used in the treatment of pneumonia in children only when the child is unable to tolerate oral fluids, or absorb oral antibiotics or presents with signs of septicaemia or complicated pneumonia.

## **References:**

*British Thoracic Society guidelines for the management of community acquired pneumonia in children: update 2011*

*Antimicrobial Paediatric Guidelines North West Paediatric Allergy, Immunology and Infection Group Operation Delivery Network (NWPAAIG) (2018)*

**Lower Respiratory Tract Infection in Children**

ASSESS airway, breathing, circulation, conscious level

No concern re: ABC or conscious level.  
 Obtain history re: feeding, vomiting,  
 Examination: assess temperature,  
 hydration, chest signs (crackles/wheeze)

Evidence of any decreased level of consciousness, stridor, tachypnoea (resp rate over 70 age 1-4, over 50 above 4 years), increased work of breathing, central cyanosis or oxygen saturation less than 92%, circulatory compromise (capillary refill >2 secs, cold peripheries, tachycardia out of proportion to fever)

Not dehydrated, no significant vomiting, systemically well with chest signs, fever greater than 38.5C and cough

Dehydrated, not tolerating fluids, systemically unwell with chest signs - circulatory compromised

**Call 999**  
 Refer for urgent paediatric assessment ASAP

Amoxicillin 5 days and review after 48 hours  
 Clarithromycin if penicillin allergic.  
 If associated with influenza co-amoxiclav recommended.  
 Parents should be given information on managing fever, preventing dehydration and identifying any deterioration.

Improving?  
 Yes  
 Complete antibiotic course

**Discuss with local Paediatric team:**

- **Countess of Chester Hospital:** 01244 365000, ask to bleep Paediatric Registrar
- **Macclesfield District Hospital:** 01625 42100 ask to bleep 3494
- **Leighton Hospital:** 01270 255141, ask to bleep Paediatric Registrar