SUPPLEMENTARY ON-LINE MATERIAL

Supplementary Table 1. Differential diagnosis of chronic cough in children

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| **Cause** | **Nature of Cough** | **Associated Features** | **Response to Therapy** |
| **Infectious diseases** | | | |
| **Pulmonary tuberculosis** | Wet, persistent & unremitting cough. Mucopurulent sputum; rarely bloody (with underlying bronchiectasis or cavitary disease). | Variable fever. Failure to thrive / malnutrition. Exposure to TB; fatigue or decreased activity/playfulness; mediastinal, hilar lymphadenopathies. | Not resolved with trial of antibiotics. Significant improvement with TB treatment |
| **Lymph node tuberculosis** | Dry, persistent & unremitting cough. | Variable fever. Failure to thrive / malnutrition. Subacute onset; wheezing or stridor. | No response to bronchodilators or antibiotics; Significant improvement with TB treatment |
| **Recurrent viral respiratory tract infection** | Acute-onset cough, initially dry then wet | Recurrent fever. Normal nutritional status. Especially infants; coryza, sore throat; improvement between episodes. | Delayed recovery, with back-to-back relapses; no response to antibacterials. |
| **Bronchiolitis** | Cough marked at onset, with steady improvement. | Fever at onset, then resolves. Normal nutritional status. Wheezing; infants. | Responsive to general supportive measures. |
| **Pertussis-like syndrome** (e.g., *Bordetella*; *Chlamydophila*; *Mycoplasma*; resp. viruses) | Intractable, loud, dry, paroxysmal cough; not always with inspiratory whoop. Small amounts of viscid clear sputum. | Fever at onset, then resolves. Normal nutritional status. Not immunized; subconjunctival hemorrhages. | Can be very slow to resolve, antibiotics have limited impact |
| **Protracted bacterial bronchitis** (e.g., *S. pneumoniae*;  *H. influenzae*; *M. catarrhalis*) | Persistent wet-moist cough with delayed recovery. Mucopurulent sputum. | Fever at onset, then resolves. Normal nutritional status. Especially young children (< 5 y.o.), who otherwise appear well. | Resolves with prolonged (>2-weeks) oral antibiotics |
| **Recurrent bacterial pneumonia** | Acute-onset cough, then improvement, then relapse. Mucopurulent sputum. | Recurrent fever. Failure to thrive / malnutrition. Improvement between episodes; may be HIV-related. | Resolves with antibiotics |
| **Chronic bacterial rhinosinusitis** | Persistent cough, worse when lying down. | Fever at onset, then resolves. Normal nutritional status. Postnasal drainage. | Resolves with appropriate treatment |
| **Allergic disease** | | | |
| **Allergic chronic rhinosinusitis** | Variable cough, worse when lying down. | Fever absent unless assoc. with secondary infection. Normal nutritional status. Nasal congestion & postnasal drainage; frequent clearing of throat. | Can be controlled with ongoing combination of allergen avoidance, medications, immunotherapy. |
| **Cough-dominant asthma** | Recurrent episodes of cough, usually dry, worse at night. May be productive of thick/mucoid sputum. | Fever absent unless assoc. with secondary infection. Normal nutritional status. May be accompanied by wheezing & dyspnea. | Responsive to bronchodilators & glucocorticoids |
| **Mucociliary disorders** | | | |
| **Cystic fibrosis** | Persistent wet cough. Copious viscid mucopurulent sputum. | Variable fever. Failure to thrive / malnutrition. Begins in early childhood; bronchiectasis; frequent wheezing; clubbing; generally Caucasian. | Acute exacerbations resolve with antibiotics; chronic cough ameliorated with daily pulmonary hygiene therapies. |
| **Primary ciliary dyskinesia** | Persistent moist cough. Mucoid or purulent sputum. | Fever absent (even sometimes during exacerbations). Normal nutritional status. Bronchiectasis; occasional wheezing; chronic rhinosinusitis, recurrent otitis media; may have situs inversus. | Acute exacerbations resolve with antibiotics; chronic cough ameliorated with daily pulmonary hygiene therapies. |
| **Aspiration syndromes** | | | |
| **Gastroesophageal reflux disease** (GERD) | Dry cough with variable persistence, worse at night, sometimes associated with stridor and wheezing; hoarseness. | Fever absent unless assoc. with aspiration-related lower respiratory tract infection. Failure to thrive (especially in severe cases). Children with neurologic abnormalities are at greater risk for aspiration complications (pneumonitis/pneumonia). | Usually responsive to dietary and medical measures.  Dysphagia cases may be responsive to swallow therapy; |
| **Retained foreign body** | Persistent cough. | Fever absent unless assoc. with secondary infection. Normal nutritional status. Especially toddlers; choking episode at onset of aspiration. | Removal of aspirated foreign body by rigid bronchoscopy. |
| **Others** | | | |
| **Lymphoid interstitial pneumonitis (LIP)** | Persistent cough. | Variable fever. Variable nutritional status. HIV-infected; parotid enlargement; persistent generalized lymphadenopathy; clubbing. | Responsive to corticosteroids. |
| **Tracheomalacia (TM)** | Brassy cough, expiratory stridor, wheezing. Thin, clear, scarce sputum. | Fever absent unless assoc. with secondary infection. Normal nutritional status. Laryngeal clefts, tracheoesophageal fistula, bronchomalacia. | Mild congenital TM improves as the infant grows. Severe TM requires surgical care. |
| **Congestive heart failure** | Persistent cough; worse at night. Thin, frothy sputum. | Fever absent unless assoc. with secondary infection. Failure to thrive / malnutrition. Pulm. edema; exercise intolerance & easy fatigue; respiratory distress with tachypnea; hepatomegaly. | Depends on the underlying etiology. |

TB: tuberculosis