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Doctors in Training

Chronic Cough in Children: What to Do and When to Refer?

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Abstract

Cough is one of the leading causes for children and their families to seek medical advice, and it may be difficult for clinicians to determine the underlying cause. Cough is a pulmonary defence mechanism and may be acute, recurrent or defined as chronic if lasting beyond 4 weeks. Further differentiating a chronic cough into wet or dry may aid clinicians in establishing the possible cause. This article provides a framework for the assessment of chronic cough in children, signposts to the latest guidelines, explains when and how to further investigate chronic cases and considers when to refer to a tertiary respiratory service.

Keywords: child; chronic cough; pulmonary disease; referral and consultation

1. Introduction

All children experience cough symptoms at some point, and 97% of children see a doctor at least once for cough, fever or earache [1]. Pre-school-aged children may experience six to ten viral colds a year [2]. Persistent cough can interfere with school attendance and may cause parental concern due to fears of potential complications such as airway obstruction, recurrent infections, and fear around a diagnosis of asthma [3]. From the perspective of parents and caregivers, seeking reassurance that there is no serious underlying illness is common. 80% of families referred to a paediatric respiratory clinic with a chronic cough have sought medical advice at least five times before the appointment.

The impact of persistent cough extends beyond respiratory health, affecting the child through sleep disturbances and related consequences, and caregivers through work absences and associated stress, ultimately reducing overall quality of life [4,5].

Cough is a primary pulmonary defence mechanism that facilitates clearance of secretions and particles, protecting the airway from aspiration. It is mediated by a complex reflex arc, in which sensory receptors in the larynx and lower respiratory tract transmit impulses to the brainstem. This reflex serves to remove inhaled matter, pathogens, accumulated secretions, and inflammatory mediators [6,7,8]. There is no stereotypical pattern, and a cough can present in a wide variety of forms [9].

Families are often concerned with the frequency of coughing. This can be unreliably reported and does not represent severity or underlying aetiology [10]. Healthy children cough frequently. In a group of 41 infection-free children with normal examination and spirometry results, this cohort coughed 11 times a day on average (range 1–34), mostly during the day [11].

Most childhood coughs are secondary to an acute respiratory tract infection and will improve once the infection is resolved, usually within 3 weeks. A cough becomes a concern and is defined as a chronic cough if it occurs daily for longer than 28 days [12].

The role of the clinician is to distinguish between children with self-limiting issues and those with potentially serious underlying conditions requiring further investigation and treatment [12]. This article provides guidance for clinicians on evaluating paediatric cough whilst highlighting key diagnostic features of chronic cough, reviewing differential diagnoses, and identifying indications for referral to tertiary respiratory services.

2. History

The first step in a consultation is to differentiate between an acute, recurrent, or chronic cough. In most cases, acute symptoms are resolved within 25 days. For example, those associated with the common cold or other non-specific respiratory illnesses typically occur for up to 16 days. Persistence beyond 28 days is classified as chronic. A symptom-free interval of at least one week between acute episodes suggests a recurrent cough, further defined as more than three episodes of lower respiratory tract infections such as bronchitis, bronchiolitis, or pneumonia per year. These episodes are most associated with viral infections [2]. It is also important to ascertain if the history is truly consistent with lower respiratory symptoms, as simple recurrent upper airway infections are often mislabeled.

A helpful clinical marker in evaluating the cause of a cough is distinguishing between a productive wet cough and a non-productive dry cough. An isolated dry cough in a healthy child with no risk factors is unlikely to be a serious underlying condition [13].

Daily moist coughs are more common in younger children, who rarely expectorate sputum. If this persists for longer than four weeks, it warrants further investigation into possible lung pathology [2,14]. Some children are more prone to developing chronic coughs. These risk factors include a history of prematurity or neonatal onset; nocturnal cough; a history of atopy; living in overcrowded environments; exposure to mold, pollution, allergens and passive smoke or vapor. Certain medical conditions are associated with an ineffective cough, and these include but are not limited to: neuromuscular diseases, chest wall deformities, children with reduced function of the abdominal wall muscles, obstructive airway disease, laryngeal disorders and children with a tracheostomy [15]. In addition to risk factors, it is also important to be aware of red flag signs prompting further investigation. Box 1 lists these red flag symptoms or signs [12].

In addition to age, duration, frequency and nature of the cough, the history should also focus on the following [15]:

- Quality of cough; barking, stridor or honking as this may suggest laryngeal or airway malacia.

- Triggers for cough; including possible seasonal patterns. Springtime exacerbations are commonly due to tree pollen.

- Associated symptoms; vomiting with gastro-oesophageal reflux.

- Does salbutamol consistently make the cough better?

- Disappearance when sleeping or on distraction; this is more typical of a habitual cough.

Box 1: Red flag symptoms warranting further investigation include:

• recurrent or chronic wet cough lasting over 4 weeks;

• atypical asthma, not responding to therapy;

• non-resolving pneumonia presenting to secondary care;

• failure to thrive.

3. Examination

Assess the child's general condition and conduct a thorough respiratory, cardiovascular and ENT examination. Ideally, the cough should be assessed in clinic; if it does not occur spontaneously, a voluntary cough manoeuvre should be performed to differentiate between a wet and dry cough [15]. Parents may have audio recordings or videos on their phones.

Physical signs are often absent, especially between infections [2,14]. Box 2 lists the important findings to assess during the examination. Analysing the child's weight and height is also important as a deviation from the growth curve can be a key indicator for severe disease.

Box 2: Features on physical examination that warrant further investigation:

• digital clubbing;

• palpable chest secretions during coughing or forced expiratory manoeuvres;

• crackles on auscultation;

• chest wall and cardiac abnormalities, including murmurs;

• weight and height deviated from the growth curve.

4. Investigations

4.1 When to Investigate?

Following the update of the CHEST chronic cough guideline in 2020, there are now high-quality studies recommending both investigations and management [12]. In many cases, further testing is not required as cough is mostly associated with respiratory infections that are typically self-limiting, mild in severity, and tend to be more common in the winter months.

In children with chronic symptoms, investigations should be guided by the initial clinical assessment. For a daily presentation persisting beyond four weeks, and in the absence of concerning features on history or examination, appropriate first-line investigations include chest radiography, spirometry (where available), and sputum culture if productive and the child can expectorate [12]. Obtaining a sputum sample in younger children may be challenging, and a cough swab may suffice.

4.2 When to Perform a Chest X-Ray?

It is recommended that a chest X-ray should be obtained in children presenting with a chronic cough. The radiation dose of a single chest X-ray is minimal, and a normal radiograph may reassure the family as well as the clinician [2,14]. Abnormalities may direct towards a specific cause, but a definitive diagnosis is rarely made on chest X-Ray alone [15]. Radiographic resolution of acute pneumonia may take longer than 12 weeks, and a follow-up X-Ray for uncomplicated acute pneumonia is not recommended if there is complete clinical resolution [16].

The approach to recurrent radiological shadowing depends on whether the abnormality is localised or multifocal. Causes of chronic localised radiographic changes include right middle lobe syndrome, localised airway obstruction leading to mucus plugging, foreign body aspiration, tuberculosis and anatomical abnormalities. Common causes of chronic multifocal radiographic changes include idiopathic bronchiectasis, cystic fibrosis, primary ciliary dyskinesia, immunodeficiency, and aspiration pneumonitis. It is important to consider gastroesophageal reflux disease (GORD), tracheoesophageal fistula, and swallowing abnormalities due to laryngeal cleft or neurological issues [2,14].

4.3 Other Investigations to Consider

Spirometry should be offered where available and can be successful in children as young as 3 years of age [12,17]. Asthma should be diagnosed if there is a consistent history with supporting clinical signs, and the bronchodilator re-

Table 1. Preliminary blood tests for children with chronic cough and other suspicious symptoms.

Blood test	Associated diagnoses
Full blood count	• Absent/low lymphocytes in severe combined immune disorder (SCID) • Raised eosinophils in allergic asthma or multi-trigger wheeze
Total IgE	• Raised in allergic disorders • May be raised in hyper-IgE syndrome • May help identify specific aeroallergens that can trigger airway inflammation
Specific IgEs to an aeroallergen panel	• Typical panel may include: ○ Animal dander (cat, dog, horse) ○ Pollens (tree, grass) ○ Moulds (Aspergillus, Cladosporium) ○ House dust mite proteins ○ Cockroach (in countries where prevalent)
Immunoglobulins IgA, IgG, IgM	May be decreased in specific disorders (e.g., IgA deficiency) or common variable immune disorder (CVID)
Vaccine responses	Typically to a protein epitope (tetanus) and to a carbohydrate epitope (pneumococcus)
Mannose binding lectin	An innate immune protein, low levels may be associated with frequent or prolonged respiratory viral infections in pre-schoolers

sponse (change in forced expiratory volume in 1 second pre- and post-administration of inhaled salbutamol) is 12% or more [18]. There is increasing recognition of the role of fractional exhaled nitric oxide (FeNO) as an aid to diagnosis of allergic airways disease. Asthma is diagnosed in children between the ages of 5 and 6 years at a threshold of 35 ppb [19]. If lung function tests are not available or if resources are limited, diagnosis can still be made based on history, examination findings and assessment following a trial of initial treatment.

Blood tests are not part of the initial work-up but should be performed in the context of a chronic cough that has some additional specific features suggestive of an underlying disorder. Initial blood investigation tests are summarised in Table 1. These are often part of the initial work-up should a child be referred to a respiratory paediatrician, with the aim to both help inform the diagnosis and to risk-stratify the presentation. For example, raised serum eosinophils are a useful biomarker of allergic/atopic cough aetiology [19] as well as helping with a diagnosis. An abnormal full blood count (FBC), especially a low or absent lymphocyte count, may direct you towards a diagnosis of immune deficiency such as severe combined immune disorder (SCID).

5. Aetiology of a Chronic Cough

5.1 Specific Causes of a Chronic Dry Cough

The majority of children presenting with a chronic dry cough are otherwise healthy with no severe underlying pathology. Sometimes the only underlying cause found is environmental exposure to tobacco or vape fumes. Parental smoking is associated with increased prevalence of chronic cough [20,21], and smoking cessation is associated with fewer preschool-aged children being admitted to hospital with viral respiratory infections [22].

5.1.1 Asthma

Asthma is a common concern among parents and may present as a chronic dry cough, often triggered by allergens with a history of atopy. Cough is the most common feature of asthma, typically occurring at night; however, it is rarely the only symptom. It is often, but not always, associated with wheezing, and symptoms will likely change to a productive wet cough during an infective exacerbation requiring acute management.

5.1.2 Gastro-Oesophageal Reflux Disease (GORD)

Gastro-oesophageal reflux disease (GORD) is one of the possible causes to consider in children with chronic dry cough. Gastro-oesophageal reflux (GOR) is a physiological phenomenon, most observed in children under 6 months with coughing often occurring after feeds; this is not a “disease” and does not need treatment unless associated with additional symptoms of severity (chest infections, feed aversion, failure to thrive). GORD, on the other hand, typically responds well to medical management and improves as the child grows—likely because it was an overdiagnosis of GOR. If a cough starts and persists after a choking episode whilst feeding, this could represent pulmonary aspiration. Investigations may reveal patchy changes on chest radiography. Further evaluation would include a speech and language assessment and a video fluoroscopic assessment of the swallow using contrast.

5.1.3 Psychogenic Cough

A chronic dry cough with no evidence of underlying illness. It is often repetitive and tic-like, disappearing when the child is distracted or asleep. The cough may be described as a bizarre honking sound often leading to concern from parents. Children are often (in retrospect) overinvestigated and over-treated, particularly with escalating doses

of inhaled corticosteroids with no clear objective measurements of airway inflammation as recommended in guidelines [10]. This may be a challenging diagnosis to explain to families, but management is based on reassurance. Studies have shown that the cough can completely resolve in most cases once the diagnosis has been accepted and understood by families, making communication and explanations key in the management approach. The majority of children with a habitual cough will have successful long-term outcomes, but developing a tic disorder, functional symptoms, or a behavioral/psychiatric disorder is not uncommon, and psychological support may be required [23].

5.2 Specific Aetiology of a Chronic Wet Cough

5.2.1 Infective Causes

The most common cause of a wet cough in children is also infection, with viral infections being the most prevalent. Recurrent viral bronchitis is often observed following viral upper respiratory tract infections and the prevalence predominantly peaks during the winter months.

Certain viral infections can result in protracted episodes of continuous cough known as post-infectious or post-viral cough. Furthermore, infections caused by specific viruses or atypical bacteria can mimic a pertussis-like syndrome. These conditions are commonly associated with *Bordetella pertussis*, cytomegalovirus, and *Chlamydia* species. When a wet cough persists beyond 4 weeks in a child who otherwise appears clinically well with a normal physical examination and no other specific pointers, guidelines suggest treating as a persistent bacterial bronchitis [12]. This condition is most prevalent in the preschool age group and is typically a result of chronic infection lining the conducting airways. Without appropriate treatment, usually with a prolonged course of broad-spectrum antibiotics, it is postulated that persistent bacterial bronchitis may progress to bronchiectasis [24].

Mycoplasma pneumoniae is the most frequently identified organism associated with atypical bacterial respiratory infections, particularly in children over 5 years in crowded settings [25]. While often asymptomatic, it can cause symptoms such as malaise, nocturnal dry cough, myalgia, and sore throat. Extrapulmonary manifestations may include glomerulonephritis, erythema nodosum, aseptic meningitis, and Guillain–Barré syndrome. Patients with preexisting lung conditions risk complications, such as empyema, pneumothorax, or respiratory distress. Atypical organisms like *M. pneumoniae*, *C. pneumoniae*, and *Legionella* lack cell walls, rendering beta-lactam monotherapy ineffective. Macrolides remain the first-line treatment, typically for 3–5 days in mild to moderate cases.

Clinical scenario 1 illustrates the importance of considering atypical symptoms in patients who do not respond to first-line beta-lactam antibiotic therapy.

In cases where a chronic wet cough is accompanied by systemic symptoms such as fever, weight loss, fatigue, and lymphadenopathy, the possibility of tuberculosis (TB) should be considered, irrespective of the population's prevalence. Research has shown common delays in the diagnosis of TB, with several months between the onset of symptoms and formal diagnosis [26,27].

• *Clinical Scenario* 1

A 6-year-old girl seen in a respiratory clinic with a history of prolonged cough for 4 weeks associated with intermittent fevers that has not responded to two courses of oral amoxicillin from the GP. The family had gone back to the GP that day, who had recorded oxygen saturations of 90% in air and a raised respiratory rate (40 breaths/min), with left-sided crackles on auscultation. She also appears thin and slightly pale. She is fully immunised with no history of recent foreign travel or unwell contacts at home. Her chest X-ray shows mild hyperinflation but does not show any focal collapse or consolidation. Blood tests report a CRP of 14 mg/dL and a normal total and differential white cell count. She is admitted to the hospital for IV antibiotics, oral macrolide and further investigations. Interferon-gamma release assay for TB, gastric aspirates, and Mantoux test are all negative. The cough is non-productive, and no respiratory samples are sent for culture. Nasopharyngeal aspirate is negative for SARS-CoV-2, RSV, rhino/enterovirus and influenza/parainfluenza. It is positive for Mycoplasma pneumoniae on PCR testing and she responds well to macrolide treatment and is discharged on day 3.

Learning point: consider atypical organisms as a cause of a cough that does not respond to "typical" treatment.

5.2.2 Primary Ciliary Dyskinesia

Consider other less common aetiologies when evaluating a chronic wet cough. In cases with recurrent upper and lower respiratory tract infections, the presence of rhinitis with or without recurrent ear infections and a persistent wet cough should prompt consideration of the rare inherited disorder of primary ciliary dyskinesia (PCD). PCD is characterised by defects in the structure and function of cilia leading to impaired mucociliary clearance and resulting in oto-sino-pulmonary disease. Notably, situs inversus is present in approximately 50% of affected individuals and may be identified as an incidental finding on imaging.

5.2.3 Cystic Fibrosis

Cystic fibrosis should be considered in cases presenting with failure to thrive, particularly when accompanied by respiratory symptoms, including in patients who have had newborn screening; patients with a prolonged wet cough who isolate "typical" cystic fibrosis bacteria on sputum or cough swabs (*Staphylococcus aureus*, *Pseudomonas aeruginosa*) should be referred for a sweat test.

Tables 2,3 highlight typical key features of the differentials for chronic cough characterised by either wet or dry cough.

Table 2. Differential diagnosis and key characteristics when assessing a dry cough.

Gastro-oesophageal reflux disease	Vomiting, weight loss, coughing after feeds, irritability, poor sleep
Asthma	Cough may be the only symptom with or without wheeze, history of atopy, may be a productive cough during an acute infective exacerbation
Psychogenic cough	Tic-like cough, repetitive, disappears during sleep or when distracted
Allergens/Pollution/Allergic rhinitis	Exposure to smoke, air pollution and dust or known allergens, postnasal drip

Table 3. Differential diagnosis and main clinical features of chronic cough (wet cough, dry cough, or mixed cough) in children.

Pertussis	Spasmodic, choking-like cough in nature; coughing may persist months after initial infection
Recurrent viral bronchitis	Upper respiratory tract infection (URTI) with periods of wellness in-between episodes
Cystic fibrosis	Failure to thrive, family history, meconium ileus, clubbing
Primary ciliary dyskinesia	Recurrent ear, nose and throat infections and situs inversus
Persistent bacterial bronchitis	Wet cough with normal examination findings
Tuberculosis	Fever, haemoptysis, weight loss, fatigue and lymphadenopathy and history of exposure
Bronchiectasis	Productive cough, recurrent infections, dyspnea, haemoptysis, chest crackles, clubbing. Need to evaluate for underlying cause
Immunodeficiency	Recurrent pneumonia, bronchitis, sinus and ear infections with atypical organisms
Inhaled foreign body	More common in infants, may be unwitnessed and unrecognized
Childhood interstitial lung disease (ILD)	Chronic lung disease not in proportion with degree of prematurity, neonatal unexplained respiratory failure, persistent tachypnoea, crackles, hypoxemia
Aspiration	Choking/gagging when feeding, children with neuromuscular conditions more at risk
Congenital abnormalities	Onset of symptoms within the neonatal period including cough, choking and feeding difficulties.

5.3 Other Important Causes of Chronic Cough

5.3.1 Inhaled Foreign Body

It is important to enquire about the possibility of an inhaled foreign body as this information may not always be volunteered [2,14] and can go unrecognised for extended periods of time. It may be unwitnessed and initially missed, possibly diagnosed as pneumonia. A study reported a delay of 55 days until bronchoscopic extraction of the foreign body [28] with a high rate of alternative diagnoses of pneumonia based on chest radiographs. Clinical scenario 2 discusses a true presentation of an inhaled foreign body in a young boy presenting with a sudden-onset cough.

• *Clinical Scenario 2*

A 4-year-old boy is seen in paediatric clinic with a prolonged cough, which has not responded to 2 courses of oral antibiotics. There is no history of fever or coryzal symptoms, and he is previously fit and well with no history of wheeze, atopy or eczema. On further history, his mother reports that he was fine until one day after nursery, when he had choked on eating a cherry, and the nursery staff said that he had needed “a pat on the back” but nothing else. Given the unusual history and presentation, a chest X-ray is arranged, which shows some changes in the left lower lobe with consolidation behind the heart. On further investigation, rigid bronchoscopy demonstrates an inflamed left main bronchus with an impacted cherry stone associated with granulation tissue. This is successfully removed, and the child goes home the same day with a repeat course of oral antibiotics.

Learning point: consider an inhaled foreign body where the history has a relatively quick onset in a younger child.

5.3.2 Congenital Abnormalities

Congenital anatomical abnormalities of the airway can present as chronic coughs (wet or dry) in the neonatal period. These may be isolated abnormalities or part of a syndrome such as VACTERL association. Conditions like tracheoesophageal fistula or laryngeal cleft cause coughing due to aspiration, and chronic cough may persist even after surgical correction due to tracheomalacia, which typically improves over time. Airway compression from conditions such as coarctation of the aorta or vascular malformations can also lead to chronic symptoms [9].

5.3.3 Interstitial Lung Disease

A rare cause of chronic cough is childhood interstitial lung disease (chILD). This term encompasses a diverse group of conditions with innate immune, genetic, infectious, and inflammatory aetiologies. While other differentials are often explored first, chILD should be considered if the child presents with tachypnoea, failure to thrive, cough, or otherwise unexplained exercise intolerance. Respiratory signs may include hypoxaemia, resting tachypnoea, chest retractions, digital clubbing and respiratory failure, and early referral to a specialist is advised.

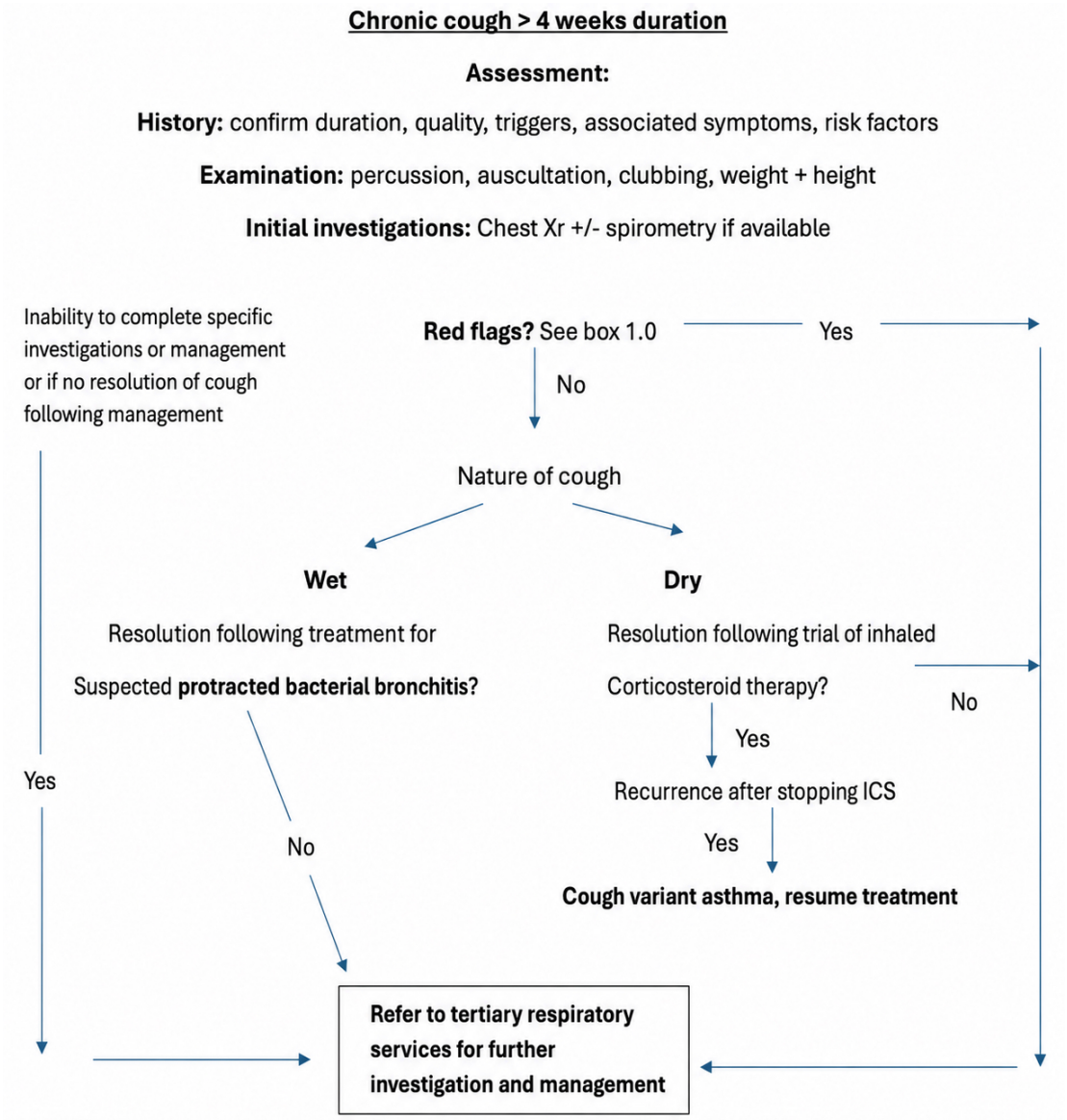

Fig. 1. Clinical management algorithm for chronic cough in children. The flowchart integrates history taking, physical examination, classification of dry versus wet cough, diagnostic workup, and referral criteria to assist clinicians in decision-making. Modified from Alviani C et al. [15].

6. Complex Presentations

Clinicians may face clinical scenarios where it can become difficult to differentiate the cause of the cough. Children frequently have multiple risk factors and may present with multiple symptoms of different aetiologies. Remember that concurrent pathologies are common. Developing a structured approach to assessment and continuing to investigate each symptom is important whilst remembering that in some cases, clinical findings may reveal more than one underlying pathology. Clinical scenario 3 exemplifies this complexity.

• *Clinical Scenario 3*

A 2-year-old boy in Paediatric Intensive Care Unit (PICU) is intubated and ventilated for 72 hours following presentation to his local district general hospital with an acute-onset viral wheeze with an NPA positive for parainfluenza type 3. He has previously been taking a salbutamol inhaler when required as prescribed by the GP. He has a history of eczema, is allergic to eggs; his mother has asthma (she is on a combination of inhaled corticosteroid-long-acting beta2 agonist inhaler) and both parents smoke cigarettes and electronic cigarettes. His chest x-ray shows widespread patchy changes as well as focal collapse of the right upper lobe; the endotracheal tube is sited correctly. Immune screening is performed, as well as a total IgE, which is 130 kU/L.

He is extubated and transferred back to his local hospital with plans for respiratory follow-up.

He has 2 further similar presentations to the hospital. On the first, he is discharged from the emergency depart-

ment and on the second he is admitted for 5 nights requiring high-flow nasal cannula oxygen. He was later seen in a respiratory clinic, and further investigations are requested. Bronchoscopy shows inflamed airways with secretions bilaterally. Staphylococcus aureus and Haemophilus influenzae are isolated in cultures and are treated with a 4-week course of co-amoxiclav. The larynx does not look completely normal but is difficult to assess with the laryngeal mask airway in situ. The lavage also shows a raised eosinophil (8% of differential white cell count). On further investigation, multichannel impedance with pH testing shows pathological acid reflux, and speech and language assessment demonstrates an unsafe swallow on video fluoroscopy. He is referred to ENT, who also diagnoses a type 2 laryngeal cleft, which is repaired. On follow-up, parents do not engage with counselling and pharmacological support for smoking cessation. His chest infections do not respond to thickened fluids, and he needs nasogastric tube feeds over the winter along with a combination of inhaled steroid/long-acting bronchodilator.

Learning point: some patients can have multiple co-existing issues which may all contribute to cough symptoms.

7. When to Refer to a Specialist?

If a serious illness is suspected, refer child to secondary care without waiting for imaging. Referral to a paediatric tertiary centre is warranted in a child presenting with chronic cough and any of the following features:

• Unexplained respiratory distress from day one of life;

• History of severe, persistent, unusual or recurrent infections;

• History of choking episodes;

• Family history, suggestive of genetic disease;

• Signs of chronic illness such as lethargy and recent weight loss;

• Underlying condition which predisposes to recurrent infections (such as cerebral palsy);

• Abnormal physical signs when the child is well such as digital clubbing or localised crackles on auscultation;

• Refer a child to secondary care with a single episode of pneumonia if it is atypical in course, either a severe prolonged episode, if an atypical organism is isolated or there are other features suggestive of an underlying condition [2,14].

See Fig. 1 (Ref. [15]), a quick reference guide to assessment, investigations, management and referral pathway for children presenting with a chronic cough.

8. Conclusion

Cough is a common reason for paediatric consultations often affecting children under 12 years, with a significant impact on both the child's daily activities and family life. Differentiating between acute, recurrent, and chronic cough during the consultation is important to establish further management. A detailed history including duration, quality, and triggers of the cough is crucial in assessing its nature. Defining a chronic wet and dry cough can help differentiate the underlying cause.

Physical examination should focus on identifying red flags such as persistent wet coughs or abnormal physical signs like digital clubbing, localised crackles on auscultation or features of systemic disease such as weight loss.

Most childhood coughs are self-limiting; however, persistent coughs require further investigation such as chest X-rays, sputum culture and spirometry/FeNO. Referral to a paediatric respiratory tertiary service is necessary for children with chronic coughs accompanied by concerning features including neonatal onset, severe or recurrent infections or signs of chronic illness.

Key Points

• Accurately assessing between acute, recurrent and chronic cough (>4 weeks), and identifying whether it is wet or dry, is important to narrowing the differential diagnosis and guiding management.

• While most childhood coughs are viral and resolve without intervention, persistent daily wet cough, abnormal examination findings, systemic symptoms, neonatal onset, or recurrent/severe infections warrant further investigation.

• Initial assessment should guide targeted first-line investigations (chest X-ray, sputum testing and spirometry where possible).

• Referral to specialist respiratory services is essential when serious underlying pathology is suspected or when cough does not respond to appropriate initial management.

Availability of Data and Materials

The datasets used or analyzed during the current study are available from the corresponding author upon reasonable request.

Author Contributions

Both authors contributed to the important intellectual information collected. LW designed and drafted the manuscript and both authors have been involved in revising it critically for important intellectual content. RB provided overall oversight. Both authors gave final approval of the version to be published. Both authors have participated sufficiently in the work to take public responsibility for appropriate portions of the content and agreed to be accountable for all aspects of the work in ensuring that questions related to its accuracy or integrity.

Ethics Approval and Consent to Participate

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Conflicts of Interest

The authors declare no conflicts of interest.

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