COUGH

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Overview

Cough is one of the most common complaints presenting to a primary care practitioner.[1] The approach to the common cough is dependent upon duration, associated symptoms, patient risk factors, and response to treatment. An acute cough is one that has been present for less than three weeks, while sub-acute and chronic coughs are present for 3-8 weeks and greater than 8 weeks, respectively.[1]

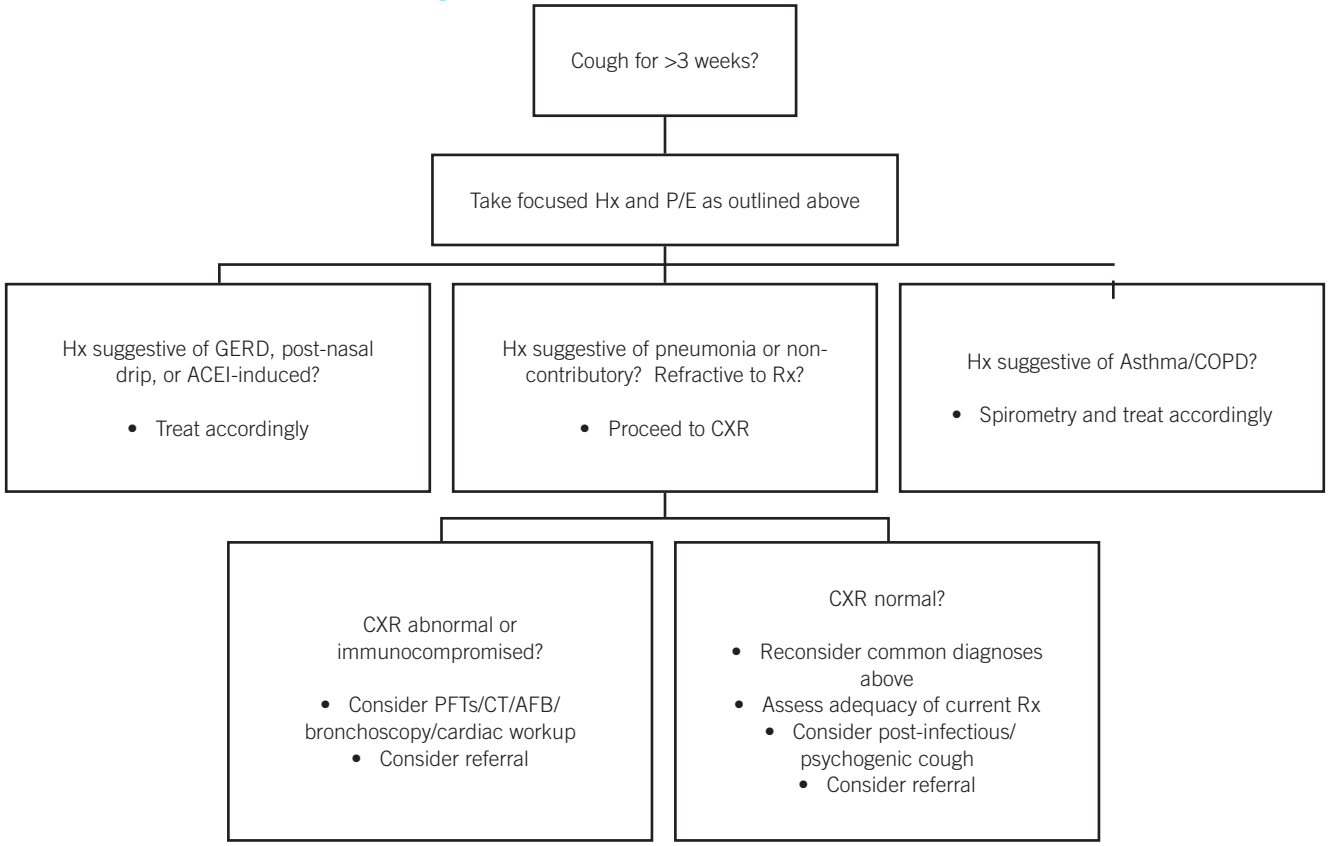
Pathophysiology

Cough receptors are present in the upper and lower respiratory tract, as well as the pericardium, esophagus, diaphragm, and stomach. These chemical receptors are sensitive to acid, heat, cold, chemical irritations, as well as touch and displacement. The central cough centre triggers the vagus, phrenic, and spinal motor pathways to initiate the expiratory muscular coughing action.[2]

Differential Diagnosis and Management

Etiology	Clinical Clues & Treatment Options
Airway irritants	• i.e. smoke, pollution, perfumes • Predictable exacerbation of symptoms with exposure and relief with removal
Respiratory infection (viral URTI or Pneumonia)[3]	• Accompanied by constellation of headache, rhinitis, malaise, myalgia, fever, purulent sputum, chills • Diagnostic work up required to determine whether antibiotics or supportive therapy indicated
Rhinitis/Post-nasal drip	• Can be caused by allergic rhinitis, vasomotor rhinitis, acute rhinopharyngitis, or acute/chronic sinusitis • Clinical clues include nasal discharge, throat clearing, sensation of dripping down throat, cobble-stoning of nasopharyngeal mucosa and presence of nasopharynx secretions on exam[4] • Can be treated with combinations of oral antihistamines, oral decongestants, oral and intranasal corticosteroids, intranasal ipratropium bromide, leukotriene receptor antagonists, and antibiotics as indicated[5] (see one pager for chronic sinusitis and allergic rhinitis for further details)
Post-viral cough[6]	• Can persist for up to 8 weeks after infection resolution • May be caused by persisted airway hyper-reactivity or post nasal drip o Can treat with inhaled bronchodilator (beta agonist or ipratropium bromide) +/- inhaled corticosteroid o Can treat as post nasal drip/rhinitis if suspected
Asthma[7]	• Cough can be accompanied by periodic dyspnea and wheezing, or can be sole manifestation of "cough-variant asthma" • Triggers can include seasonal changes, respiratory infection, or dust/mold/dander/dry air/fragrances • Typically family or personal history of atopy • Pulmonary Function Testing (PFT) will show reversible air-flow obstruction or positive broncho-provocation testing • Treatment includes: o Inhaled short acting beta agonist prn +/- inhaled glucocorticoid +/- long acting beta agonist +/- leukotriene receptor agonist
Gastroesophogeal reflux disorder[8]	• Cough is commonly accompanied by sensation of epigastric burning or bitter taste, but can present independently • Diagnosed with pH monitoring, barium swallowing, or directly on OGD • Treatment includes: o Lifestyle changes include weight loss, smaller meals, avoidance of trigger foods, avoid lying after eating, raising head of bed, smoking cessation o Pharmacotherapy includes acid suppression with H2 Receptor Antagonists (H2RA) or Proton Pump Inhibitors (PPI)
Drug induced	• Common cause is ACE inhibitors[9]: o Onset usually within 1 week, but may be delayed up to 6 months o Cessation of therapy improves symptoms in 1-4 days o Symptoms recur with re-challenge from different ACE inhibitor • Other common drugs include[6]: o Beta-blockers, amiodarone, aspirin, NSAIDs, methotrexate, nitrofurantoin, sulfasalazine, tetracycline, minocycline
Bronchiectasis[8]	• Results from severe, persistent airway inflammation creating dilated bronchi, poor secretion clearance, mucous pooling • Chest radiograph may demonstrate crowded lung markings, thickened bronchial walls; CT scan is preferred in securing diagnosis • Cause should be identified: o Focal bronchiectasis often due to prolonged or severe lower respiratory infection o Multifocal bronchiectasis may be secondary to mycobacterium avium complex (MAC) o More diffuse changes should warrant work up for cystic fibrosis or immunoglobulin deficiency state
Lung cancer[1]	• Bronchogenic carcinoma can present initially with cough but is present in less than 2% of cases of chronic cough • Weight loss, cachexia, hemoptysis, or abnormal imaging should increase suspicion of malignancy and warrant further investigation
Rare causes[8]	• Swallowing dysfunction/aspiration • Anatomical malformation • Laryngeal sensory neuropathy • Tonsillar enlargement • Irritation of external auditory canal • Premature ventricular contractions

Approach to Subacute or Chronic Cough in Adults



Bottom Line

Acute, sub-acute, and chronic coughs are a common complaint in family medicine. Methodical history taking, focusing upon duration of cough, patient risk factors, associated symptoms, and response to empiric treatment should provide significant insight into the likely etiologies of this presentation.

References can be found online at http://www.dfcm.utoronto.ca/programs/postgraduateprograme/One_Pager_Project_References.htm