IPCRG practice driven answers on COVID-19 and respiratory questions

Is there an algorithm for diagnosing chronic cough in adults?

What the research says

Chronic cough in adults is defined as a cough persisting for at least 8 weeks. Chronic cough is a presenting symptom for a wide range of conditions although four conditions account for the majority of cases: upper airway cough syndrome, gastroesophageal reflux disease (GERD), asthma and nonasthmatic eosinophilic bronchitis (Michaudet & Malaty 2017). Red flags that should raise suspicion for an underlying, potentially malignant, pathology include associated fever, weight loss, haemoptysis, hoarseness, excessive dyspnoea or sputum production, recurrent pneumonia, a smoking history of 20 pack years or a smoker older than 45 years (Irwin et al 2018). Initial treatment should focus on the underlying cause (if one is found). A detailed and systematic approach is therefore required. A number of evidence-based algorithms for the diagnosis of chronic cough in adults are available (Irwin et al 2018; Iyer et al 2013; Kardos et al 2020; Morice et al 2019).

What this means for your clinical practice

- All people with cough of at least 8 weeks duration should have chest x-ray
- Undertake a thorough history, physical examination and additional testing as clinically indicated to identify specific causes and treat accordingly
- Begin by evaluating for red flags that may raise suspicion for an underlying malignant pathology
- Consider trial of pharmacotherapy if no underlying cause/trigger identified (unexplained chronic cough)
- Refer for specialist evaluation if no improvement after a trial of pharmacotherapy (unexplained/refractory chronic cough)

Adults (Irwin et al 2018; Iyer et al 2013; Kardos et al 2020; Morice et al 2019 ; Satia et al 2021): Cough duration >8 weeks

<table>
<tr><td colspan="2">Evaluate for red flags that may indicate an underlying potentially malignant pathology</td></tr>
<tr><td>Undertake a detailed history and physical examination:

• Cough duration, description and timing (morning, evening, indoor, outdoor)
• Impact and triggers
• Family history
• Cough score (VAS or verbal out of 10). Consider other tools such as the Leicester cough questionnaire
• Assess associated symptoms
• Assess for potential causes:
  ○ Upper airway cough syndrome
  ○ GERD/reflux
  ○ Asthma
  ○ Nonasthmatic eosinophilic bronchitis
  ○ ACE inhibitor-associated cough
  ○ COPD
  ○ Smoking
  ○ Lung tumour
  ○ Hypersensitive cough
  ○ Interstitial lung disease
  ○ Tuberculosis (consider regional epidemiology)
  ○ Aspiration
  ○ Cardiac causes
  ○ Unclassified cough (no apparent cause)</td><td>Obtain chest X-ray

Next steps:
• Spirometry
• PFT (if indicated by spirometry)
• FeNO (if available)
• Blood eosinophils

Further evaluations may be necessary, if clinically indicated, including:
• CT chest
• Echocardiogram
• Sputum cultures
• Sputum for AFB
• Sinus imaging
• GI referral (scope, ph monitoring)
• Respiratory referral for sputums or bronchoscopy</td></tr>
<tr><td>Initial management</td><td>Treat specific cause and if cough is improved continue for 3 months after which withdrawal can be considered</td></tr>
<tr><td>No improvement</td><td>1. Review adherence to prescribed therapies
2. Consider other factors such as inhaler technique
3. Evaluate for other potential diagnoses
4. Consider referral for specialist evaluation</td></tr>
</table>

AFB, acid-fast bacillus; COPD, chronic obstructive pulmonary disease; CT, computerized tomography; GERD, gastroesophageal reflux disease; PFT, pulmonary function test; VAS, visual analogue scale.

Useful links and supporting references

Irwin RS, et al. Classification of cough as a symptom in adults and management algorithms. CHEST guideline and Expert Panel report. Chest 2018;153:196–209.

Iyer VN, Lim KG. Chronic cough: an update. Mayo Clin Proc 2013;88:1118.

Kaplan A. Chronic cough in adults: Make the diagnosis and make a difference. Pulm Ther 2019;5:11-21. Available at: https://link.springer.com/article/10.1007/s41030-019-0089-7. Accessed April 2021.

Kaplan A. Improving the assessment of adults with chronic cough in primary care. Available at: https://www.ipcrg.org/11541. Accessed April 2022.

Kardos P, et al. German Respiratory Society guidelines for diagnosis and treatment of adults suffering from acute, subacute and chronic cough. Respir Med 2020;170:105939. (Available at: https://www.resmedjournal.com/article/S0954-6111(20)30079-2/fulltext; pay-per-view)

Michaudet C, Malaty J. Chronic cough: evaluation and management. Am Fam Phys 2017;96:575–80.

Morice AH, et al. ERS guidelines on the diagnosis and treatment of chronic cough in adults and children. Eur Respir J 2019;55.

Satia I, et al. Chronic cough: Investigations, management, current and future treatment. Can J Respir Crit Care Sleep Med 2021;5:404-16. Available at: https://www.tandfonline.com/doi/full/10.1080/24745332.2021.1979904. Accessed April 2022

Authors

Dr Alan Kaplan (Chair Family Physician Airways Group of Canada) for and on behalf of the IPCRG practice driven answers review group.

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