Respiratory Medicine

Eight Things Physicians and Patients Should Question

by

Canadian Thoracic Society

Last updated: May 2024

Choosing Wisely Canada™

In collaboration with the Canadian Medical Association

1 Don't initiate long-term maintenance inhalers in stable patients with suspected COPD if they have not had confirmation of post-bronchodilator airflow obstruction with spirometry.

A diagnosis of COPD should be considered in any patient who has dyspnea, chronic cough, and/or sputum production and an appropriate history of exposure to noxious stimuli. However, not all patients with these symptoms have COPD, and a spirometry demonstrating a post-bronchodilator forced expiratory volume in one second to forced vital capacity (FEV1/FVC) ratio < 70% (or less than the lower limit of normal, if available) is required to make a definitive diagnosis. Starting maintenance inhalers without first objectively diagnosing COPD results in unnecessary treatment in those patients who do not actually have the disease. In turn, this exposes these patients to both the side-effects and the cost of these medications, and might delay the appropriate diagnosis.

2 Don't perform CT screening for lung cancer among patients at low risk for lung cancer.

Lung cancer screening with a chest CT scan has no proven benefit in patients who are not at high risk for lung cancer. The use of low dose chest CT scan for lung cancer screening has been found to reduce lung cancer mortality in patients at high risk for lung cancer. While there are some differences across jurisdictions in terms of the eligibility for enrollment in a screening program, the Canadian Task Force on Preventive Health Care currently recommends screening adults aged 55-74 years old with a 30 pack-year smoking history who currently smoke or quit less than 15 years ago, though some screening programs are using evidence-based risk assessment calculators to determine eligibility for enrollment. However, screening is also associated with several potential harms, including false-negative and false-positive results, incidental findings, overdiagnosis (detecting indolent and clinically insignificant tumors that would not have been detected in the patient's lifetime without screening), and cumulative exposure to radiation (which can cause cancer). Screening also leads to unnecessary anxiety and invasive procedures, which carry their own complications. Accordingly, it should not be used in patients who do not meet these evidence-based criteria, nor in patients with a health problem that substantially limits life expectancy or the ability or willingness to have curative therapy. Because of the evolving nature of the evidence for lung cancer screening eligibility criteria, and the need to ensure access to all the necessary components of high-quality screening, it is recommended that lung cancer screening occur within an organized screening program when it is available within a reasonable geographic proximity and a reasonable wait time.

3 Don't perform chest computed tomography (CT angiography) or ventilation-perfusion scanning to evaluate for possible pulmonary embolism in patients with a low clinical probability and negative results of a highly sensitive D-dimer assay.

The majority of adults with chest pain and/or dyspnea do not have a pulmonary embolism (PE). There is strong evidence that in patients with low pre-test probability as determined by a clinical prediction rule (e.g., Wells score), a negative highly sensitive D-dimer assay effectively excludes clinically important PE. Furthermore, there are potential harms to performing CT pulmonary angiography (CTPA) or ventilation-perfusion (V/Q) scanning, including exposure to ionizing radiation, adverse events due to the administration of intravenous contrast, and identification of clinically insignificant PE leading to inappropriate anticoagulation. However, physicians should exercise clinical judgement in populations in whom this two-step algorithm has not been validated (e.g., pregnant patients).

4 Don't treat adult cough with antibiotics even if it lasts more than 1 week, unless bacterial pneumonia is suspected (mean viral cough duration is 18 days).

The majority of adults with a short duration of cough from an acute respiratory tract infection have a viral rather than a bacterial infection. Patients often underestimate the typical cough duration from an infectious illness, and when cough does not resolve within their expected time frame, may request antibiotics. The average duration of cough (not treated with antibiotics) is around 18 days, though patients only expect to cough for 5 to 7 days. Use of immediate or delayed antibiotics does not change clinical outcomes compared to no antibiotics in these situations. On the other hand, the harms of over-prescribing antibiotics include medication costs, adverse reactions, and the possibility of inducing bacterial resistance to antibiotics. Physicians should educate patients about the expected duration of cough and the consequences of inappropriate antibiotic use in acute respiratory tract infections.

5 Don't continue medications for asthma (e.g., inhalers, leukotriene receptor antagonists, or other) in individuals who have not had a clear clinical benefit or confirmation of reversible airflow limitation with spirometry or peak flow testing, and when non-diagnostic, a positive methacholine or exercise challenge test, provided timely access to testing allows it.

Although international guidelines uniformly recommend objective testing to establish an asthma diagnosis, this diagnosis is often made clinically and asthma medications are often initiated on that clinical basis. However, physical exam findings and symptoms such as cough, wheeze, and/or dyspnea can be caused by other conditions. As a result, up to one third of patients who have been diagnosed with asthma do not have evidence of asthma when objectively tested with pulmonary function tests. A false clinical diagnosis of asthma may delay diagnosis of the actual underlying condition, which may include serious cardiorespiratory conditions. Furthermore, patients with a false diagnosis of asthma who are started on asthma medications are unnecessarily exposed to both the side-effects and the costs of these medications. For individuals 6 years of age and older who are able to reliably perform pulmonary function testing, an abnormal spirometry (or challenge test) can be helpful for confirming a diagnosis of asthma, however spirometry can also be falsely negative, especially in individuals with episodic symptoms. Objective testing for asthma is not broadly available for children less than 6 years old and, in this age group, the diagnosis of asthma should be made clinically. Following the global pandemic, availability of diagnostic testing is limited in many regions, and treatment can be initiated without confirmatory testing when diagnostic testing is not available in a timely manner. Individuals should be clinically reassessed, and the diagnosis should be confirmed with pulmonary function testing as soon as such testing is available. Consideration should strongly be given to stopping asthma therapy if the individual has not had a severe exacerbation in the last year, testing fails to confirm the diagnosis, and/or clear benefit is not observed. Where safe and possible, individuals should stop asthma controller therapy for 4-8 weeks to optimize the sensitivity of lung function testing for asthma diagnosis. It is noted that measurement of lung volumes and diffusing capacity (DLCO) are not needed for a diagnosis of asthma.

6 Don't use antibiotics for acute asthma exacerbations without clear signs of bacterial infection.

Asthma exacerbations are characterized by decreased expiratory airflow as well as increased shortness of breath, cough, wheezing, chest tightness, or a combination of these symptoms. When such an attack is precipitated by an infection, it is much more likely to be viral than bacterial. The role of bacterial infection is often overestimated; however antibiotics should be reserved for relatively rare cases in which there is strong evidence of a bacterial infection, such as pneumonia or bacterial sinusitis. Potential harms of unnecessary antibiotic treatment include medication costs, side-effects (including a risk of allergy), and emergence of bacterial resistance.

7 Don't delay conversations about wishes and goals with patients who have serious or progressive chronic respiratory illness, such as COPD, IPF, PH, or CF, or advanced neuromuscular disease affecting the respiratory system (e.g. Duchenne Muscular Dystrophy, ALS, etc.). Having and documenting these conversations can help to avoid unwanted and/or unnecessary and potentially harmful interventions.

Supporting patients with serious or progressive respiratory illness to identify and document their values and treatment wishes is an important, but often neglected, intervention. While these patients often experience complex disease trajectories that make accurate prognostication challenging, these discussions can ensure future care is aligned with patients' preferences.

8 Don't prescribe greenhouse gas-intensive metered-dose inhalers (MDIs) for asthma and/or COPD where an alternative inhaler with a lower carbon footprint (e.g. dry powder inhaler (DPI), soft-mist inhaler, or MDI with a low greenhouse gas potential propellant) containing medications with comparable efficacy is available, and where the patient has demonstrated adequate technique and patient preference has been considered.

Metered-dose inhalers (MDIs) contain HFC propellants, which contribute to global warming. When prescribing inhalers, providers should consider whether an objective diagnosis of asthma and/or COPD exists or needs to be confirmed, in keeping with existing CWC CTS recommendations (#1 and #5). Also, optimal choice of controller inhaler agents and non-pharmacologic strategies (e.g. education, trigger avoidance, action plans) should always be included in airway disease management, as they not only improve patient outcomes, but can also reduce rescue inhaler use.

Low carbon footprint inhalers may not be appropriate for some patients (i.e. preschool children, individuals with certain cognitive limitations, end-stage lung disease, muscle weakness or other physical limitations, and during respiratory emergencies). Other patients simply prefer MDIs. Ultimately, whether starting or substituting an inhaler, providers must consider medication efficacy, patient preference, adherence, technique, cost, and side-effect profile. A shared decision-making approach should be used, and the environmental benefits of alternatives to greenhouse gas-intensive MDIs should also inform this decision.

How the list was created

The Choosing Wisely Canada top six list in respiratory medicine was developed by the Canadian Thoracic Society (CTS) through an iterative consultation process with CTS content experts and its members. A list of candidate recommendations was developed through: 1) consultation with the CTS Choosing Wisely Core Task Force (5 members), all CTS guideline writers, and the CTS Executive Committee; 2) retrieving respiratory-related choosing wisely recommendations in existing US and Canadian lists; and 3) selecting all Canadian Medical Association (CMA) POEMs™ (Patient-Oriented Evidence that Matters) between 2012-2015 that were considered to "help to avoid unnecessary or inappropriate treatment, diagnostic procedures, preventative interventions or a referral" by ≥ 10% of readers [in the Information Assessment Method (IAM) rating tool]. The CTS Choosing Wisely Task Force (comprised of the CTS Choosing Wisely Core Task Force and the CTS Canadian Respiratory Guidelines Committee; 19 members) then selected and prioritized 20 of these recommendations based on pre-established criteria, through an electronic Delphi process. These 20 recommendations were then sent to the entire CTS membership for selection and prioritization of the top 10 recommendations, along with a solicitation for new ideas. A second electronic Delphi process with the CTS Choosing Wisely Task Force narrowed this list to a final top 10. The CTS Choosing Wisely Core Task Force then performed a narrative literature review for each of these recommendations, focusing on similar prior Choosing Wisely recommendations, guideline recommendations, systematic reviews, and individual studies. The results of this review were presented to the CTS Choosing Wisely Task Force in a 3rd electronic Delphi process, in which they were asked to select and prioritize the top 5 recommendations. Given that scores between the 5th and 6th rated recommendations were close, 6 recommendations were adopted. These recommendations were approved by the CTS Executive Committee and will be broadly disseminated to our membership, other professional groups, and the general public.

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About the Canadian Thoracic Society

The Canadian Thoracic Society (CTS) is a proud partner of the Choosing Wisely Canada campaign. CTS is Canada's national specialty society for respirology bringing together over 1,000 members representing specialists, physicians and researchers as well as healthcare professionals from a variety of disciplines working in respiratory health.

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About Choosing Wisely Canada

Choosing Wisely Canada is the national voice for reducing unnecessary tests and treatments in health care. One of its important functions is to help clinicians and patients engage in conversations that lead to smart and effective care choices.

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