Chronic obstructive pulmonary disease and asthma management in older patients

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Clinical question

How can I optimize chronic obstructive pulmonary disease (COPD) and asthma management in my older patients?

Bottom line

The prevalence of COPD increases with age (20% to 30% in patients >70), and asthma in the elderly is also common (>10% of patients older than 60).[1] Accurate diagnosis is crucial but can be harder in older people; symptoms can be subtle and are often underestimated, and some frail or cognitively impaired patients cannot perform testing. Spirometry is underused, even when patients are able to participate.

Medication choice is important and depends on the diagnosis (asthma vs COPD), but getting medications to the lungs is crucial. Older people can have great difficulty with many devices, meaning that many patients do not get the full benefit of their respiratory medications.

A full summary of COPD management for older adults is available from the *Canadian Geriatrics Society Journal of CME* (**https://canadiangeriatrics.ca/wp-content/uploads/2020/11/THE-OLDER-PATIENT-AND-OBSTRUCTIVE-AIRWAY-DISEASES-LIMITATIONS-FROM-SPIROMETRY-TO-DEVICES.pdf**).[2]

Evidence

Factors negatively affecting the ability to do proper spirometry include low scores on cognitive and functional testing, and low level of education. Age alone is not a clear factor.[3] However, there are alternatives to spirometry.

There are several questionnaires for asthma or COPD validated in primary care: the International Primary Care Airways Group questionnaire, the COPD Population Screener questionnaire, and the Lung Function Questionnaire. All have shown high negative predictive values (94% to 96%) but poor positive predictive values.[4]

Many patients with asthma and COPD do not use their inhalation devices correctly, which may obviate benefits. Clinicians should pay attention to both the medication prescribed and the device used.[5]

When possible, using a similar device for different medications (assuming that delivery system is effective for the patient) leads to better outcomes.[6]

Approach

Most (>80%) older patients can have meaningful forced expiratory volume in 1 second and forced vital capacity measurements, and with evaluation of respiratory symptoms, can have a timely and accurate diagnosis of asthma or COPD. Unfortunately, frail and cognitively impaired patients may not be able to perform accurate spirometry; alternative strategies are reviewed in the summary of COPD management.[2]

Nonpharmacologic therapy includes management of comorbidities (eg, glaucoma, cardiac disease, osteoporosis), trigger avoidance (if possible), smoking cessation, vaccination, and rehabilitation. Therapy for COPD involves long-acting b_2-agonist (LABA) inhalers, long-acting muscarinic antagonists (LAMAs), or both, as well as other agents for exacerbation prevention. Asthma therapy should always include inhaled corticosteroids (ICS) with or without a LABA inhaler, and also a LAMA.

Selecting an appropriate device for older patients is important, as the ability to use a device may be affected by physical issues (weakness, impaired dexterity, vision, poor hearing, low inspiratory rates) and cognitive and mood disorders. Furthermore, discomfort using the device or lack of effect can lead to adherence issues.

With uncontrolled symptoms or limited medication coverage, review the patient's condition (eg, diagnosis, phenotype, comorbidities) and address reasons for suboptimal control (eg, triggers, smoking, nonadherence, poor inhaler technique, poor peak inspiratory flow rate). Discuss inhaler or device options and patient preferences (eg, size, daily regimen), and treatment goals. Shared decision making, education on devices (physical demonstration and verbal explanation, with patient repetition), and follow-up are important (**Figure 1**).[7]

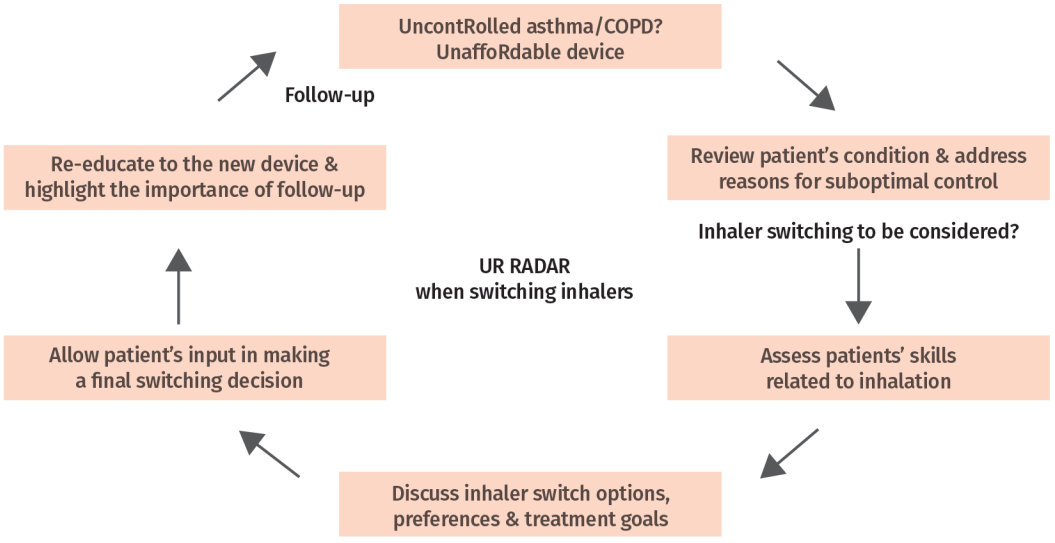
Implementation

Spirometry can be done by most people. If not feasible, questionnaires can help to rule out disease, while normal peak flow can rule out serious COPD. Peak expiratory flow testing is less sensitive; however, a 20% improvement in peak flow after bronchodilators supports a diagnosis of asthma, and a peak expiratory flow rate less than 80% detects more than 90% of people with COPD, including those with moderate or severe disease.[8]

Choice of device and optimizing adherence are crucial. Device choices are listed below and full information about pros and cons can be found in the summary of COPD management.[2] Common issues include not loading the device properly, not exhaling before use, lack of breath hold, breathing in pressurized metered-dose inhaler doses too quickly, and inhaling dry-powder inhaler doses too slowly.

- Pressurized metered-dose inhalers are still the most commonly prescribed devices. Accurate timing of inhalation

Figure 1. UR RADAR approach to poorly treated symptoms



COPD—chronic obstructive pulmonary disease.
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after depressing the canister is necessary and can be improved with the use of valved holding spacers.

- Dry-powder inhalers are breath-actuated by inhaling through the device. In Canada, devices are available with a short-acting b-agonist (SABA), a LABA, a LAMA, ICS, ICS with a LABA, and ICS with a LABA and a LAMA.
- Soft-mist inhalers use a spring to create 2 sprays that combine to create a slow-moving liquid aerosol with no propellant and a slower mist than a metered-dose inhaler, potentially lessening the need for coordination. The device rather than the patient creates the drive, so a slower inhalation is produced. The longer and slower mist increases the probability of the medication reaching the lungs. In Canada, this is available as a LAMA, a LABA and LAMA combination, and a SABA and short-acting muscarinic antagonist (SAMA) combination.
- Nebulizers can be useful for inhalation, as they do not need coordination. However, they require an energy source, waste the drug, take longer to use, and are potentially aerosol generating (important for seasons with viral illnesses). In Canada, they are available for SABAs, SAMAs, and SABAs with SAMAs.

Not all medications or classes are available in all devices. Those with cognitive issues would benefit from something passive, such as nebulizers or metered-dose inhalers with a chamber. Family supervision may be helpful for all devices. See Figure 1 in the summary of COPD management[2] for an algorithm to help the clinician when changing the patient device to one the clinician believes is the optimal choice.

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Competing interests

Dr Alan Kaplan has received support as a speaker or advisory board member for AstraZeneca, Behring, Boehringer Ingelheim, Cipla, Covis, GlaxoSmithKline, Novartis, Novo Nordisk, Pfizer, Sanofi, Teva, and Trudell Medical.

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