

Introduction

Chronic lung diseases, in particular COPD, lead to a high burden of disease reflected in morbidity, mortality, and health care costs. COPD is the third leading cause of death worldwide, causing 3.23 million deaths in 2019.¹ In 2019, it was associated with 4.7% of global disability-adjusted life years and ranked as the sixth leading cause of disability-adjusted life years.² In Canada, all-cause mortality rates were higher among those living with COPD than those without COPD, across all age groups; rate ratios ranged from 3.7 in the 50-54 age group to 1.7 in the 85 and older age group.³ COPD accounts for over 50% of chronic respiratory disease prevalence among males and females,⁴ and for an astounding 81.7% of the total number of deaths from chronic respiratory diseases.⁵

The course of COPD over time is characterized by persistent dyspnea and disability⁶ with acute exacerbations that lead to a faster lung function decline,⁷ worsened health status,⁸ and increased hospitalizations.⁹ Exacerbations are the main driver of health care costs and the large economic burden in COPD has been documented in a number of studies.¹⁰ The 30-day readmission rate for acute exacerbations in different developed countries can be as high as 22%, and poor discharge medication reconciliation is among the factors thought to contribute to early readmissions.¹¹ Severe exacerbations are also associated with increased all-cause mortality.¹²

There is an urgent need to offer effective and personalized management plans for individuals living with COPD to improve symptoms and health status, prevent acute exacerbations and reduce mortality. An integrative comprehensive approach to

COPD management that includes confirming a diagnosis of COPD with spirometry; evaluating symptom burden, health status, and risk of exacerbations over time; and implementing pharmacological and nonpharmacological treatments is both effective and recommended. Importantly, relevant and evidence-based nonpharmacologic interventions such as smoking cessation counseling, vaccinations, self-management education, and pulmonary rehabilitation aimed at healthy lifestyle behaviors and improved daily management of COPD are vital for effective comprehensive management of COPD.¹³

This clinical practice guideline, informed by a comprehensive systematic review and a meta-analysis: (i) provides an update from the Canadian Thoracic Society (CTS) Clinical Practice Guideline on Pharmacotherapy in Patients with COPD – 2019 for the optimal approach to the pharmacological treatment of individuals with COPD to alleviate symptoms, improve health status and prevent exacerbations¹³; and (ii) synthesizes emerging evidence on whether maintenance pharmacotherapy reduces mortality. This guideline has systematically evaluated evidence and formulated corresponding evidence-based recommendations for each key clinical question and outlines a practical clinical treatment pathway based on those recommendations, the quality and strength of the evidence, balance of benefits and harms, and perceived patient preferences.

This guideline does not address nonpharmacological interventions (eg, smoking cessation counseling, vaccines, self-management education, pulmonary rehabilitation), long term oxygen therapy, noninvasive ventilation, interventional bronchoscopy or surgery, respiratory palliative care, or management of acute exacerbations.

Objectives

The overall objective of this CTS guideline is to help clinicians match pharmacological treatment to the clinical status of individuals with stable COPD. This is an important step toward personalizing therapy based on individual characterization.

The specific objective is to provide clinical guidance with evidence-based recommendations from a systematic review with a meta-analysis and expert-informed clinical remarks to optimize maintenance

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