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Pharmacotherapy for Chronic Obstructive Pulmonary Disease: Molecules and Delivery Are Equally Important

To the Editor:

When prescribing inhaled maintenance therapy for an individual with chronic obstructive pulmonary disease, healthcare professionals (HCPs) should ideally perform three steps: *1*) assess dyspnea/symptoms and future risk of an exacerbation, *2*) select a long-acting inhaled β-agonist and/or a long-acting muscarinic antagonist as well as possibly an inhaled corticosteroid, and *3*) select one of four delivery systems (1). The recent American Thoracic Society Clinical Practice Guideline on Pharmacologic Management of Chronic Obstructive Pulmonary Disease addresses four clinically relevant PICO (Population, Intervention, Comparator, and Outcome) questions related to inhaled therapies (2). The recommendations provide up-to-date and authoritative guidance for HCPs when they consider the first two steps of the decision process noted above.

This guideline (2) as well as the Global Initiative for Chronic Obstructive Lung Disease strategy (1) recommend long-acting inhaled β-agonists, long-acting muscarinic antagonists, and inhaled corticosteroid as groups of medications by necessity rather than as specific molecules with unique delivery systems—pressured metered-dose inhaler, dry powder inhaler, slow/soft mist inhaler, and nebulization. By grouping medications, there are two inherent assumptions: *1*) similar but different molecules are comparable in efficacy and *2*) inhalation of the molecule into the lower respiratory tract using correct technique is comparable regardless of the delivery system. Unfortunately, this overall approach lacks specific guidance for matching individual patient characteristics such as cognitive function, including coordination ability, manual dexterity, and peak inspiratory flow, with the most appropriate delivery system, each of which requires specific instructions for use (3).

Algorithms for selecting the most appropriate inhaler delivery system based on patient characteristics have been proposed (4–6). However, to our knowledge, randomized trials have not been performed to examine whether a particular algorithm makes a difference in patient outcomes. Appropriate guidance for HCPs in inhaler selection appears to be a major unmet need in caring for patients with chronic obstructive pulmonary disease. To fill this gap, we encourage professional organizations such as the American Thoracic Society, patient advocacy groups, and pharmaceutical companies to support prospective studies that examine matching molecule and inhaler according to the abilities and skills of the individual patient (i.e., precision medicine). The inhaler delivery system is equal in importance to the prescribed molecule. ■

Author disclosures are available with the text of this letter at www.atsjournals.org.

Donald A. Mahler, M.D.*
Geisel School of Medicine at Dartmouth
Hanover, New Hampshire
and
Valley Regional Hospital
Claremont, New Hampshire

Jill A. Ohar, M.D.
Wake Forest University School of Medicine
Winston-Salem, North Carolina

Gary T. Ferguson, M.D.
Pulmonary Research Institute of Southeast Michigan
Farmington Hills, Michigan

James F. Donohue, M.D.
University of North Carolina School of Medicine
Chapel Hill, North Carolina

*Corresponding author (e-mail: mahlerdonald@gmail.com).

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Reply to Mahler *et al.*

From the Authors:

We would like to thank Drs. Mahler, Ohar, Ferguson, and Donohue for their interest in the "Pharmacologic Management of Chronic Obstructive Pulmonary Disease: An Official American Thoracic Society Clinical Practice Guideline" (1). We wholly agree with the

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The authors are the co-chairs of the official American Thoracic Society Document entitled, "Pharmacologic Management of Chronic Obstructive Pulmonary Disease: An Official American Thoracic Society Clinical Practice Guideline."

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