

Chronic Obstructive Pulmonary Diseases: Journal of the COPD Foundation



Editorial

Nebulized Long-Acting Beta2-Agonists: More Than Just Bridging Gaps in the Management of Symptomatic COPD

Daniel A. Gerardi, MD¹ Nicholas J. Gross, MD²

Abbreviations: chronic obstructive pulmonary disease, **COPD**; long-acting beta2-agonists, **LABAs**; acute exacerbation of COPD, **AECOPD**
Citation: Gerardi DA, Gross NJ. Nebulized long-acting beta2-agonists: More than just bridging gaps in the management of symptomatic COPD. *Chronic Obstr Pulm Dis.* 2017;4(1):1-3. doi: <https://doi.org/10.15326/jcopdf.4.1.2016.0175>

1 Department of Pulmonary Medicine, Saint Francis Hospital and Medical Center, Hartford, Connecticut and The University of Connecticut School of Medicine, Farmington

2 University Medical Research, Saint Francis Hospital and Medical Center, Hartford, Connecticut and The University of Connecticut School of Medicine, Farmington

Address correspondence to:

Daniel A. Gerardi, MD
 dgerardi@stfranciscare.org

Keywords:

chronic obstructive pulmonary disease, COPD; long-acting beta2-agonists; LABAs

Long-acting bronchodilator maintenance therapy has been the cornerstone of treatment for symptomatic patients with chronic obstructive pulmonary disease (COPD) for nearly 2 decades. New products and combinations of medications are continually offered, all designed to moderate symptoms, but also to advance the Global initiative for chronic Obstructive Lung Disease¹ initiatives of exacerbation reduction and attempted disease moderation. Specific bronchodilator therapy prescriptions are directed by clinicians seeking the most suitable fit for their patients. In particular, nebulized long-acting beta2-agonists (LABAs) remains a medication category that, despite well described properties, continues to be underused and in need of clarification of its place in the hierarchy of medications.²

[The Expert Panel discussion \(Wise et al\)](#) in this issue is the most thorough review of the use of nebulized LABAs published to date.³ *Unmet needs* of patients with COPD are myriad, but the authors bring focus and

clarity to specific areas that might enjoy the advantage of nebulized LABA therapy. Exacerbations, a source of damaging morbidity, soaring costs, and reductions in quality of life and lung function, remain insufficiently treated by preventative pharmacology. In particular, continuity of care after an acute exacerbation of COPD (AECOPD) is a key factor in limiting early relapse. Nebulized LABAs have potential to plug that gap in therapy. The authors highlight other COPD conundrums that make it impossible to eliminate all exacerbations—unstable comorbidities, unsupported social situations, as well as patient adherence, making us ponder if exacerbations can ever be entirely eliminated. But perhaps the most important highlight of this complex patient population is the under recognition and under treatment of cognitive dysfunction calling into question the use of more common treatments of pressurized metered dose inhalers, soft mist inhalers and dry powder inhalers.⁴

The Expert Panel makes a number of important recommendations. Nebulized LABA as the bridge of treatment for AECOPD seems an underutilized yet sensible approach to their use.⁵ As the authors point out, there remains a gap in the literature with limited data supporting nebulized LABAs in many settings. This is one such area where that gap is identified but where experience and logic, when all else fails, are the best guidance. It's also clearly seen in the important consideration of nebulized LABA in patients with noticeable cognitive impairments. The idea that cognitive impairment in COPD is seen with increased frequency in the general population has received, until now, less attention than deserved. But voids in

measuring such cognitive impairments are substantial. What is the best test to screen our patients? How should busy clinicians efficiently screen their patients? These are gaps in potential care that must be bridged. Are nebulized LABAs truly better in this patient population? More evidence is needed in this area and should be the focus of future clinical research.

Identifying who should best benefit from nebulized LABA therapy remains debatable. Limited data and an ever broadening pharmacologic armamentarium add complexity to medical decision making. What is certain is that a thoughtful approach to each patient

with individualized prescription planning is essential to best management. Facing an era where novel and expensive biologic agents are unfolding, with parenteral delivery and their mechanisms including their own set of potential adverse effects, can only add to systemic problems of COPD treatment. The authors have pushed us forward in the thinking on this as yet uncontained disease.

References

1. Global Initiative for Chronic Obstructive Lung Disease (GOLD). Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease: Executive summary 2013. GOLD website. <http://www.goldcopd.org>. Published 2013. Accessed November 2016.
2. Donahue, JM, Hanania NA, Fogary C, et al. Long-term safety of nebulized formoterol: results of a twelve-month open-label clinical trial. *Ther Adv Respir Dis*. 2008;2(4):199-208. doi: <https://doi.org/10.1177/1753465808093934>
3. Wise RA, Acevedo RA, Anzueto AR, et al. Guiding principles for the use of nebulized long-acting beta2-agonists in patients with COPD: An expert panel consensus. *Chronic Obstr Pulm Dis*. 2017; 4(1):804-817. doi: <https://doi.org/10.15326/jcopdf.4.1.2016.0175>
4. Jarvis S, Ind PW, Shiner RJ. Inhaled therapy in elderly COPD patients; time for re-evaluation? *Age Aging*. 2007;36:213-218. doi: <https://doi.org/10.1093/ageing/af1174>
5. van Geffen WH, Douma WR, Slebos DJ, et al. Bronchodilators delivered by nebuliser versus pMDI with spacer or DPI for exacerbations of COPD. *Cochrane Database Syst Rev*. 2016. 29;(8):CD11826. doi: <https://doi.org/10.1002/14651858.cd011826.pub2>