

# PALLIATIVE PEARLS

BY ENCLARA PHARMACIA

## COPD Inhalation Therapy Conversion Case June 2016

### Patient Case:

JA is a 75 year old woman who lives with her daughter recently admitted to hospice with a primary diagnosis of COPD. Her medical history includes rheumatoid arthritis and mild dementia. During a home hospice visit, JA reports worsening shortness of breath. JA's daughter carefully monitors her mother's medications to ensure that JA takes all doses as prescribed. There are no signs and symptoms indicative of a respiratory tract infection. If JA is taking her medications as directed, why do you think she is still experiencing worsening dyspnea? Could there be an issue with JA's medication regimen? What should you assess and what are your recommendations?

### Current COPD medications:

- Combivent® Respimat is a combination of ipratropium and albuterol administered through an inhaler device to treat COPD. The usual dose is 1 puff QID.
  - A Respimat inhaler is a propellant-free Soft Mist Inhaler (SMI). The soft mist results in increased cloud duration and deposition of the medication in the lungs.
- Prednisone 10mg by mouth daily

### Assessment:

COPD is characterized by progressive persistent airflow limitation due to airway inflammation, fibrosis, and destruction of the air sacs. These changes result in air getting trapped in the lungs and inability to expel air. Symptoms include progressive dyspnea, chronic productive cough, and a feeling of chest tightness and wheezing.

On exam, JA is pleasant and alert to place, but not date or time. She recognizes her daughter, but she does not remember what she did yesterday. JA's hands are arthritic and she has difficulty grasping a drinking glass. She is afebrile, tachycardic, with a respiratory rate of 22. Her pulse ox is 89% on 3 liters oxygen via nasal cannula. JA is using accessory muscles when breathing and coughs when taking a deep breath. She has wheezing and some rhonchi throughout her lungs. Her cough is productive of a small amount of white sputum. When assessing her inhaler use, she's noted to have difficulty handling her inhaler and she coughs when trying to inhale its contents.

### Assessment summary:

JA's rheumatoid arthritis is making it difficult for her to physically handle her Combivent® Respimat inhaler, and her dementia is also likely contributing to improper inhaler use. These factors, in addition to her compromised lung function, are reducing the amount of drug deposited in the lungs, resulting in unmanaged symptoms and worsening dyspnea.

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## Recommendation:

- D/C Combivent® Respimat
- Start Duoneb® (ipratropium bromide-albuterol sulfate 0.5mg-3mg/3ml) at a dose of one ampule inhaled via a nebulizer QID.

## Nebulizers vs. inhalers for elderly and advanced COPD patients:

The use of Metered-Dose Inhalers (MDIs) and SMIs require dexterity, hand-breath coordination and the ability to understand the steps for use. Dry Powder Inhalers (DPIs) such as Advair require the ability to understand steps for use and the ability to take a fast, deep breath. With proper inhaler techniques, DPIs and MDIs are equally effective in delivering inhaled medications. However, poor handling of inhaler device and inhalation technique decreases medication delivery and worsens symptom control. Therefore, it is important to check a patient's inhaler technique on a regular basis to ensure proper use of inhaler device.

In comparison, nebulizers require only normal tidal respiration for the medication to be deposited in the lungs and no coordination for effective use. Therefore, they are easier for patients who have physical limitations, such as those with arthritis, stroke, weakness, or have Parkinson's, or in those with cognitive deficits, as well as those with advanced lung disease. For patients with end stage COPD, nebulized medications such as DuoNeb® are better tolerated, which generally results in improved symptom relief.

## Recommended alternative:

- DuoNeb® (ipratropium-albuterol) 0.5-2.5 mg/3mL nebulizer solution

## Dose comparison (Patient Case):

MDI/DPI Dosage Form	Nebulized Alternative
Combivent® Respimat	DuoNeb® (albuterol-ipratropium)
1 puff Q.I.D.	1 ampule Q.I.D.

## Product comparison (Other common medications utilized in COPD):

MDI/DPI Dosage Form	Nebulized Alternative
Spiriva® (tiotropium)	Atrovent® (ipratropium) 0.02% solution
Atrovent® HFA (ipratropium)	Atrovent® (ipratropium) 0.02% solution
Serevent®(salmeterol)	Albuterol 0.083% solution
ProAir® HFA (albuterol) & Proventil® HFA (albuterol)	Albuterol 0.083% solution

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