



Newer Puffers – Benefits, Costs, Should we be Changing?

Shawn Aaron

The Ottawa Health Research Institute

University of Ottawa

The Canadian Respiratory Research Network
(CRRN)



My potential conflicts:

- I sit on Advisory Boards for GSK, AZ, BI and Sanofi.
- I have given CME's for GSK and AZ in the past.
- I will be using 'brand names' during my presentation.
- Despite my COI my presentation will be strictly scientific and will not be influenced by any commercial interests.



Theme of the Talk Today:

- Treatment of Asthma and COPD with puffers.
- Are the new ones better than the old?
- What's better for my patient and for the world?



Three major types of inhalers:

- 1) Metered-dose inhalers
- 2) Dry-powder inhalers
- 3) Soft-mist inhalers

Three major types of inhalers:

1) Metered-dose inhalers



2) Dry-powder inhalers



3) Soft-mist inhalers



Metered-dose inhalers with a spacer:



Good things

- 1) Cheap.
- 2) Good lung deposition with an aerochamber.
- 3) Patients with poor inspiratory flow rates can still get drug down into the lungs.
- 4) Able to be used during exacerbations.



If you are not able to do this, keep your lips tight on the mouthpiece



CLIMATE CHANGE:

- **Metered-dose inhalers** (MDI's) contain high levels of hydrofluorocarbons that, when released into the atmosphere, act as potent greenhouse gases.
- Metered-dose inhalers are estimated to contribute 3.1% of the carbon footprint of the National Health Service in the United Kingdom and roughly 0.03% of annual global greenhouse gas emissions.

Metered-dose inhalers with a spacer:



Bad things

- 1) Contribute to climate change/global warming.
- 2) Poor lung deposition if patients do not use an aerochamber.



If you are not able to do this, keep your lips tight on the mouthpiece

Dry powder inhalers:



Good things

- 1) Easy to use.
- 2) Easy to teach.
- 3) Some are once-daily.
- 4) No contribution to climate change.



Dry powder inhalers:



Bad things

- 1) Patients who are weak and frail, and those who have muscle weakness, will not be able to generate the necessary inspiratory flows to get the powder down into their lungs.



Soft mist inhalers:



Good things

- 1) No need for an aerochamber.
- 2) Patients inhales slowly and deeply, no need for muscle strength.
- 3) Good lung deposition.
- 4) No contribution to climate change.

Soft mist inhalers:



Bad things

- 1) There are no soft mist inhalers that contain ICS- therefore they are not indicated for asthma.
- 2) They can be difficult to put together when they come out of the box.
- 3) More steps to remember, harder to teach patients how to use.

What inhaler should I use to treat asthma?

- The new GINA guidelines recommend first line treatment with **ICS/LABA combination therapy as needed** (ex. Symbicort or Zenhale).
- Rationale: using ICS/formoterol as a reliever reduces the risk of exacerbations compared to using Ventolin as a reliever.

If you use ICS/LABA combinations PRN:

- Be careful what you prescribe, only ICS/Formoterol combos can be used PRN.
- You can prescribe these PRN:
Zenhale or **Symbicort** (these take 5 mins to work).



These combinations cannot be used PRN!

Advair, Breo, or Generic Wixela take 60 mins to achieve bronchodilation.

They are fixed-dose inhalers, meant to be used daily. They cannot be used PRN.



*Product image for reference use only

Equivalent Costs/Month for Asthma Inhalers: (source: Canada Wide Pharmacy)

\$75



\$114



\$150



\$150



\$189



*Product image for reference use only

So what inhaler is cheapest and best for asthma?

- **Symbicort** will be cheapest, especially if it's used PRN, since on average most patients will use less than one inhaler per month.
- It is recommended in GINA guidelines.
- It won't harm the environment.

What inhaler should I use to treat COPD?

- The new ATS guidelines¹ recommend first line treatment with **Combination LABA/LAMA inhalers** (ex. Anoro, Ultibro, Inspiolto, or Duaklir).
- Rationale: using a long-acting beta agonist bronchodilator and a long-acting anti-muscarinic bronchodilator together achieves the best therapeutic effect for COPD patients.

First-line inhalers to treat COPD:



Anoro

\$113



Ultibro

\$112



Duaklir

\$91



Inspiolto

\$91

So what LABA/LAMA inhaler is cheapest and best for COPD?

- **Inspiolto** will be cheapest.
- It does not require high inspiratory flow rates.
- It won't harm the environment.

When Should I Use 'Triple therapy' to treat COPD?

- Triple therapy = ICS/LABA/LAMA.
- Triple therapy should be used in patients with COPD who:
 - 1) Have frequent exacerbations (two or more exacerbations/year requiring antibiotics or steroids).
 - 2) Have a history of asthma, who later develop COPD.

Triple therapy inhalers to treat COPD:



Single inhaler = Trelegy

\$192



+



Two inhalers =

Advair + Spiriva (**\$232**)

or

Symbicort + Spiriva (**\$196**)

or

Wixela + Spiriva (**\$157**)



So what Triple therapy inhaler is cheapest and best for COPD?

- **Wixela plus Spiriva** will be cheapest.
- It won't harm the environment.
- Caveat: Wixela is a dry-powder inhaler, so it will require relatively high inspiratory flow rates.
- For a frail, weak patient I would recommend Advair MDI + Spiriva Respimat instead.

Whatever you prescribe- you have to teach the patient how to use it!

- I keep samples of metered dose inhalers (with aerochambers), dry-powder inhalers, and soft mist inhalers in my office.
- I give the patient a sample and I show them how to use it.
- I watch them use it and I watch them take at least one puff before they leave the office.