

## Algorithm for the use of inhaled therapies in COPD

This algorithm has been developed by the Berkshire West Respiratory Network to support clinicians in selecting the most appropriate, cost effective treatments for patients with Chronic Obstructive Pulmonary Disease. ***Patients with co-existing Asthma and COPD may need to be managed differently and advice should be sought from the relevant specialist teams, if needed.***

The algorithm is intended for use when initiating new treatments due to disease progression and is not intended to be used for switching patients from their existing treatment, unless the patient is uncontrolled or struggling to use their current treatment/device. A validated questionnaire, such as the COPD Assessment Test (CAT) should be used to assess individual patient symptoms.

Over the last 12 months there have been a number of new drugs, combinations of medications, devices and branded generics of long established treatments which have been launched in to the market. This algorithm gives guidance as to where these new products sit into the existing framework and recommends the use of locally preferred agents as first or second line choices. However if the patient cannot tolerate or use the preferred agents the most appropriate alternative within the recommended class(es) of drug should be prescribed.

As there is currently a split between clinicians using the NICE Guidelines and GOLD Guidelines (which incorporates symptoms as well as airflow obstruction and exacerbations) this document contains the locally preferred agents in both formats. Clinicians should use the format that they find the most useful.

### Key things to consider for all patients at all stages:

- Offer referral to a smoking cessation service to any person with COPD who continues to smoke.
- Offer the pneumococcal vaccination and annual influenza vaccination as recommended by NICE.
- Refer to Pulmonary Rehabilitation especially if the MRC grade is 3 or above.
- Check inhaler technique with every device used, at every opportunity.
- Treatment with a metered dose inhaler (MDI) is much more effective if used with a spacer device, especially in exacerbations. Ensure every patient with COPD has a spacer to use if they use an MDI and knows how to use it.
- All new inhaler treatments should be assessed for effect on symptoms after a trial period (e.g. using CAT scores) and treatment should be withdrawn if no benefit is being demonstrated.

### Inhaler technique

Poor inhaler technique is a very common cause of treatment failure. All clinicians involved in the management of patients with COPD should ensure that they know the correct inhaler technique for any device that their patients are using. It is important to ensure that patients are regularly asked to demonstrate how they use their different devices and that the clinician is able to correct the technique as appropriate. This is especially important when assessing if a treatment has been ineffective.

If a patient is unable to use a particular device, then an alternative option, from the algorithm, where possible, should be prescribed. Patients should not have their therapy stepped up before they have tried alternative devices that contain medications from the same class, unless the severity of their disease has worsened.

There are a number of devices available to support improvements in inhaler technique, “In-check DIAL” for clinicians and “2Tone Trainer” for patients. These devices are not available on the NHS.

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**Patients with co-existing Asthma and COPD may need to be managed differently. This algorithm is intended for the management of patients with pure COPD only.**

### Mild

- FEV<sub>1</sub> % predicted ≥ 80% (based on post bronchodilator FEV<sub>1</sub> in patients with FEV<sub>1</sub>/FVC < 0.7)
- and/or
- Few symptoms
- and/or
- ≤1 exacerbation per year

#### Offer Short Acting Beta Agonist (SABA) when required.

Salbutamol 100mcg/dose (MDI preferred, with a spacer for greater effectiveness) – *Two puffs when required up to four times a day*

Alternative Options:

Easyhaler® Salbutamol 100mcg/actuation (dry powder) - *Two puffs when required up to four times a day*

**OR**

Short Acting Antimuscarinic Agent (SAMA)

Atrovent® Inhaler (with a spacer for greater effectiveness) - *Two puffs when required up to four times a day*

### Moderate

- FEV<sub>1</sub> % predicted 50-79% (based on post bronchodilator FEV<sub>1</sub> in patients with FEV<sub>1</sub>/FVC < 0.7)
- and/or
- Daily symptoms
- and/or
- ≤2 exacerbation per year

#### Offer regular Long Acting Antimuscarinic Agent (LAMA) when required\*. Continue SABA prn. Discontinue SAMA if in use.

If the patient experiences no response to the first agent after 4 weeks try a second LAMA before trialling a LABA alone.

<b>1<sup>st</sup> line:</b> Tiotropium 18mcg (Spiriva Handihaler®)	<b>1 inhalation once daily</b>
<b>2<sup>nd</sup> line:</b> Eklira Genuair®▼ (Aclidinium bromide 322mcg) <b>OR</b> Spiriva Respimat® (Tiotropium 2.5mcg) <b>Avoid in unstable cardiac disorders</b>	1 inhalation twice daily  2 puffs once daily

Alternative option where a LAMA is unsuitable (side effects, no benefit or contraindicated):

#### Offer Long Acting Beta<sub>2</sub> Agonist (LABA). Continue SABA prn.

<b>1<sup>st</sup> line:</b> Formoterol Easyhaler® <b>12mcg</b>	<b>1 or 2 puff twice daily</b>
<b>2<sup>nd</sup> line:</b> Striverdi Respimat®▼ (Olodaterol 2.5mcg)	2 puffs once daily

Increasing severity

If there has been some response to a single agent LAMA / LABA but the patient is still symptomatic: **Offer a LAMA / LABA combination dependant on the agents used above. Continue SABA prn.**

Spiolto Respimat®▼ (Tiotropium 2.5mcg and Olodaterol 2.5mcg) – *Two puffs once daily*

**OR**

Duaklir Genuair®▼ (Aclidinium 340mcg and Formoterol 12mcg) – *One inhalation twice daily*

### Severe and very severe

- FEV<sub>1</sub> % predicted <50% (based on post bronchodilator FEV<sub>1</sub> in patients with FEV<sub>1</sub>/FVC < 0.7)
- and/or
- ≥3 exacerbation per year

If all other treatment options have been tried (including pulmonary rehab) and the patient is still symptomatic and/or exacerbating frequently: **Consider Inhaled Corticosteroid/LABA +/- LAMA (this should be the agent used above where possible). Continue SABA prn.**

Fostair 100/6® (Beclometasone 100mcg and Formoterol 6mcg) with a spacer for greater effectiveness – *Two puffs twice daily*

**OR**

DuoResp Spiromax® 320/9 (Budesonide 320mcg and Formoterol 9mcg) – *One puff twice daily.*

Both of these options give a daily ICS dose equivalent to 800-1000mcg of Beclometasone. Be aware of the potential to develop side effects (including non-fatal pneumonia) in people with COPD treated with ICS and be prepared to discuss this with patients.

**Note this algorithm lists the locally preferred treatment options. However, if the patient cannot tolerate or use the listed inhaler device, the most appropriate alternative within the recommended class(es) of drugs should be prescribed.**

## Algorithm for the use of inhaled therapies in COPD using the GOLD Guidelines

Patients with co-existing Asthma and COPD may need to be managed differently. This algorithm is intended for the management of patients with pure COPD only.

