

# Opinion

## The Management of Stable Chronic Obstructive Pulmonary Disease (COPD) in Primary Care

This opinion sheet examines the management of stable COPD based on the latest National Institute for Health and Clinical Excellence (NICE)<sup>1</sup> Guidelines 2010. The Primary Care Respiratory Society (PCRS) UK publication "Diagnosis and Management of COPD in Primary Care"<sup>2</sup> summarises a multi-dimensional patient centred approach in a management algorithm (Figure 1).

**The goals of COPD management are:**

- To improve current control (symptoms, health status, everyday activities, improve lung function).
- To prevent future risk (reduce exacerbations, slow disease progression, reduce mortality).

**ALL PATIENTS** should receive the following:

**Smoking cessation advice** (where applicable)

- Smoking cessation can slow disease progression and reduce mortality.
- Referral to smoking cessation services offering a full range of cessation options.
- Nicotine replacement therapy, oral bupropion or varenicline can improve smoking cessations rates.

See opinion sheet 17 for more information on smoking cessation advice ([http://www.pcrs-uk.org/resources/os17\\_smoking\\_cess.pdf](http://www.pcrs-uk.org/resources/os17_smoking_cess.pdf))

**Immunisation**

Offer a single dose of **pneumococcal vaccine, and annual influenza vaccination** to reduce the risk of exacerbations

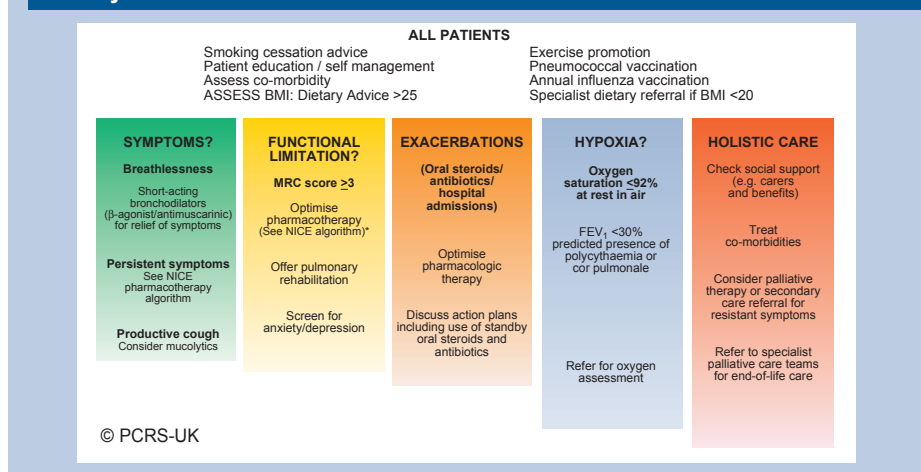
**Exercise advice**

- All patients with COPD should be encouraged to exercise within the limits of any co-morbidity.
- Consider referring patients with mild disease to local exercise promotion schemes.
- Offer pulmonary rehabilitation to patients with functional limitation (see below).

**Dietary advice**

- Overweight patients (BMI>25) should be advised to lose weight.

**Figure 1: Algorithm for Patient-Centred Management of Stable COPD in Primary Care**



- Underweight patients (BMI<20) should be referred to a dietician.

**Patient disease education**

This should include information about the disease and its treatment, with an emphasis on encouragement of self-management, including COPD action plans where appropriate.

See our opinion sheets on self-care and self-management for more information.

**Symptomatic patients**

**Managing breathlessness**

The degree of breathlessness should be assessed by the MRC Dyspnoea score (see Table 1).

Inhaled pharmacotherapy is the mainstay of symptomatic management but advice about breathing techniques can be useful, especially for patients

with frequent exacerbations. The NICE Guidelines have produced an algorithm for inhaled pharmacotherapy (Figure 2).

The choice of a particular therapy depends on cost, and patients' ability to use, and preference for, a particular inhaler device. Most patients will manage a hand-held inhaler device: nebulised therapy is rarely needed. A portable spacer device may help drug delivery via a metered dose inhaler (MDI) especially during an exacerbation. It is important to check inhaler technique and discuss compliance each time the patient is reviewed.

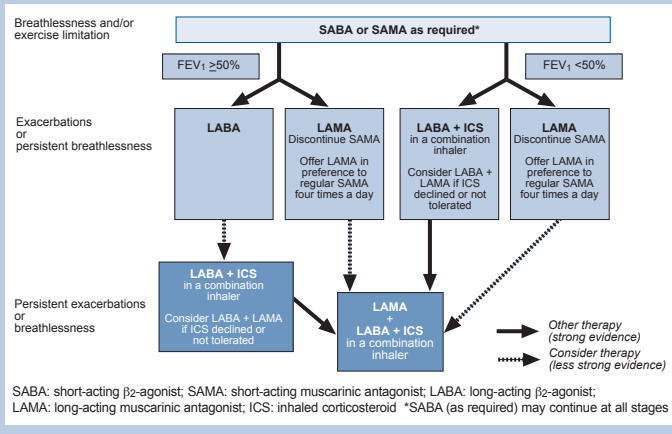
**Intermittent breathlessness**

- Use a short-acting β<sub>2</sub>-agonist bronchodilator (e.g salbutamol, terbutaline) for relief of symptoms irrespective of their effect on lung function. They have an onset of action within 5 minutes and

**Table 1. Medical Research Council (MRC) Dyspnoea Score**

Grade	Degree of breathlessness related to activities.
1	Not troubled by breathlessness except on strenuous exercise
2	Short of breath when hurrying or walking up a slight hill
3	Walks slower than contemporaries on level ground because of breathlessness, or has to stop for breath when walking at own pace
4	Stops for breath after walking about 100m or after a few minutes on level ground
5	Too breathless to leave the house, or breathless when dressing or undressing

**Figure 2: Pharmacotherapy algorithm from the 2010 COPD Guidelines (reproduced with permission of the National Institute for Health and Clinical Excellence)**



duration of action of 4-6 hours.

- Alternatively a short-acting muscarinic\* agent (ipratropium) can be used; onset of action is within 30 minutes and duration of action 4-6 hours.

\*Note: 'Anti-muscarinic agent' is the preferred term for 'anti-cholinergic agent'.

### Persistent breathlessness

Regular treatment with long-acting bronchodilators can:

- Improve lung function (FEV<sub>1</sub>, FVC)
- Reduce dynamic hyperinflation of the lungs and hence reduce the work of breathing, improving breathlessness and exercise capacity.
- Improve health status.
- Reduce exacerbations and hospital admissions.

For patients with FEV<sub>1</sub> < 50% predicted choose between:

- A long-acting anti-muscarinic agent (LAMA) e.g tiotropium. Once daily tiotropium is more cost effective than regular ipratropium. The main side effect is dry mouth. (Note that ipratropium must be stopped if a LAMA is prescribed). Newer agents are twice daily aclidinium and glycopyrronium bromide.
- A long-acting  $\beta_2$ -agonist (LABA) (e.g salmeterol, formoterol, indacaterol). The main side effects are palpitations and tremor.

For patients with FEV<sub>1</sub> < 50% predicted and persistent symptoms or exacerbations, the use of a LAMA or inhaled corticosteroid/long-acting  $\beta_2$ -agonist (ICS/LABA) combination therapy in preference to LABA alone is recommended:

- Formoterol 12mcg/budesonide 400mcg and salmeterol 50mcg/fluticasone 500mcg are licensed to be

### Managing cough

- Patients with distressing, viscid sputum may be helped by a mucolytic agent; carbocisteine (Mucodyne™) or mecysteine (Visclair™). Patients with a positive symptomatic response to a 4 week trial of either agent should continue treatment long term. Physiotherapy may be of benefit
- Consider a diagnosis of bronchiectasis in patients with recurrent or chronic purulent cough.

### Managing functional limitation in patients with COPD

Patients who have a restriction in their daily activities due to COPD (usually with MRC score  $\geq 3$ ) should:

- Have their pharmacotherapy optimised (see Figure 2).
- Be offered and encouraged to attend pulmonary rehabilitation (including after an exacerbation or hospital admission)
- Be screened for depression and anxiety and treated appropriately, including therapy with antidepressants or cognitive behavioral therapy where indicated.

### Patients with exacerbations of COPD

- Optimise pharmacotherapy (Figure 3) and non-drug therapy (e.g pulmonary rehabilitation).
- Treat co-morbidities e.g depression, osteoporosis.

Self-management action plans should be discussed and standby courses of oral antibiotics / oral steroids provided. Plans should include advice on:

- How to recognise an exacerbation.
- When to use standby courses of antibiotics/oral steroids.
- When to call for help.

given twice daily via dry powder devices. Patients should be advised of the side effects of the inhaled steroid component including dry mouth, oral candidiasis, dysphonia and the small increased risk of pneumonia.<sup>3</sup> It should be noted that in COPD ICS are only licensed to be used in combination with LABA.

See our range of opinion sheets for more advice on self-management and self-care.

### Patients with hypoxia

Refer patients for consideration of long-term oxygen therapy if:

- Oxygen saturations  $\leq 92\%$  in air when the patient is rested and clinically stable (i.e stable readings 3 weeks apart). This is irrespective of the level of severity of COPD This is particularly important in the presence of cor-pulmonale (ankle oedema and raised JVP) or polycythaemia.

Some patients with exercise desaturation may benefit from ambulatory oxygen, and may be referred for assessment.

### Holistic care

For all patients this involves an awareness of and appropriate treatment/referral for co-morbidities and psychosocial needs.

In patients with severe disease consideration should be given to initiating palliative care. This may range from use of opiates in resistant breathlessness to referral to palliative care services for end stage disease. See our opinion sheet on end of life care for more information.

### Referral for specialist advice

Possible reasons for referral include:

- Diagnostic uncertainty (especially with frequent infections)
- Presence of "red flag" symptoms (e.g weight loss, haemoptysis)
- Assessment for oxygen therapy
- Very severe COPD for advice on advanced treatment options (e.g. use of maintenance oral steroids, nebuliser therapy or lung surgery)
- Onset of symptoms under age 40 or family history of alpha-1-anti-trypsin deficiency
- Rapid decline in FEV<sub>1</sub>
- Assessment for pulmonary rehabilitation.

### References

- National Institute for Health and Clinical Excellence. Chronic obstructive pulmonary disease: management of chronic obstructive pulmonary disease in adults in primary and secondary care. London: National Clinical Guideline Centre, 2010. Available from [www.nice.org.uk/CG101](http://www.nice.org.uk/CG101)
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