

# Opinion

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

This opinion sheet outlines the management of stable COPD based on the National Institute for Health and Clinical Excellence (NICE) Guidelines 2010.<sup>1</sup> The Primary Care Respiratory Society UK (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

#### Smoking cessation advice

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

See opinion sheet 17 for more information on smoking cessation advice.

#### Immunisation

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

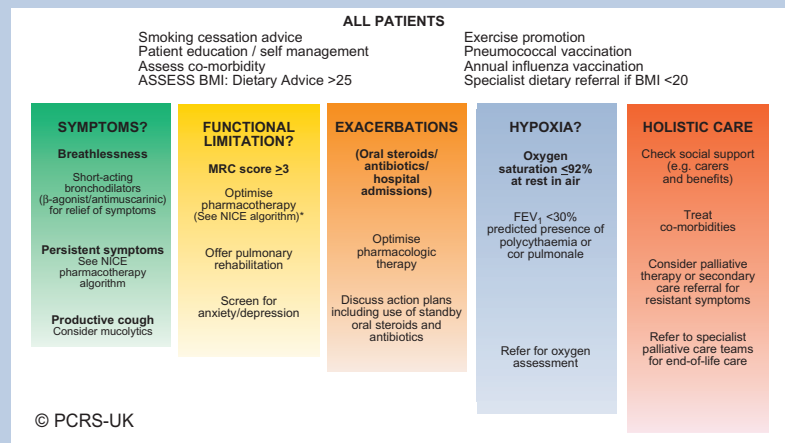
#### Exercise advice

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

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



### Patient disease education

This should include information about COPD and its treatment with an emphasis on encouraging self-care, including providing COPD action plans where appropriate.

See opinion sheet 34 for more information on self-care and self-management plans.

### 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 also be useful, especially for patients with frequent exacerbations. The NICE COPD Guidelines have an algorithm for

stepping up inhaled pharmacotherapy. (see figure 2).

The choice of a particular therapy depends on cost, and the 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 a patient is reviewed.

#### Intermittent breathlessness

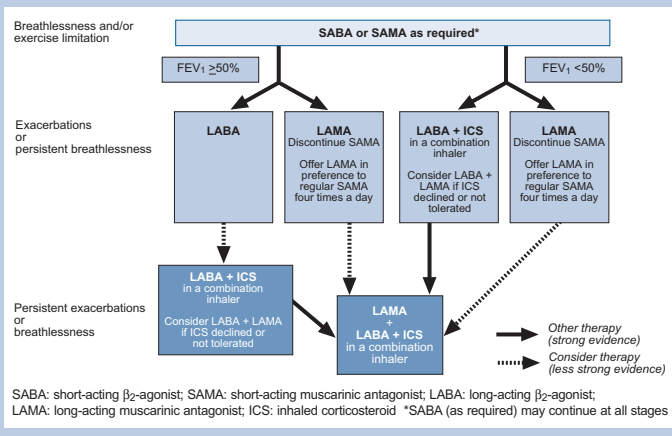
- Use a short-acting β<sub>2</sub>-agonist bronchodilator (e.g salbutamol, terbutaline) for relief of symptoms irrespective of their effect on lung function. They have an onset of action within 5 minutes and duration of action of 4-6 hours.

**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 waking 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 place
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)**



- 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' is the preferred term for an '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)
- 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 (Symbicort™) and Salmeterol 50mcg/Fluticasone 500mg (Seretide™)

are licensed to be 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 non-fatal pneumonia.

It should be noted that in

COPD, ICS are only licensed to be used in combination with LABA. For more information on the use of LABA and ICS in COPD see opinion sheet 18.

#### Managing cough

Patients with distressing, viscid sputum may be helped by a mucolytic agent: carbocysteine (Mucodyne™) or mecysteine (Visclair™). Patients with a positive symptomatic response to a 4 week trial of either agent should continue treatment long term. See opinion sheet 2 for further information on the use of mucolytic agents.

- Physiotherapy may be of benefit
- Consider a diagnosis of bronchiectasis in patients with chronic or frequent recurrent purulent cough.

#### Managing functional limitation

Patients who are restricted 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 behavioural therapy.

#### 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 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.

See opinion sheet 11 and 34 for more information on self-management plans and self-care.

#### Patients with hypoxia

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

- Oxygen saturations are repeatedly  $\leq 92\%$  in air when the patient is rested, and clinical stable. This is irrespective of level of severity of the 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

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 opinion sheet 7 for more information on end-of-life care in COPD.

#### 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)
- Gruffydd-Jones K, Haughney J, Jones R, O'Kelly N. *Diagnosis and Management of COPD in Primary Care*. Primary Care Society UK 2010. Available from [www.pcrs-uk.org](http://www.pcrs-uk.org)

**Date of Preparation:** January 2007 **Revised:** December 2010 **Author:** Dr Kevin Gruffydd-Jones **Conflict of interest:** Spoken for and acted as an advisor to GSK, AstraZeneca, Novartis, MSD, Napp, Pfizer, Boehringer Ingelheim, Chiesi **Editor:** Dr Paul Stephenson, PCRS-UK **Editor-in-Chief:** Dr Mark Levy, PCRS-UK

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