Most nurses – not just those who are specialist chronic obstructive pulmonary disease (COPD) or respiratory nurses – will routinely care for people who have COPD. As described in part one of this series, COPD is a long-term, progressive respiratory disease, which imposes a significant health-related burden on the individual. Although there is no cure for this progressive respiratory disease, nurses have a crucial role in its treatment and management, including helping patients to minimise and control their symptoms, and improve the quality of their lives. This article, the second in a two-part series, describes treatment and management options when patients are stable and during events, such as exacerbations, when their condition deteriorates. It describes the safe, effective use of inhaled and oral drug treatments and oxygen therapy, as well as non-pharmacological interventions – such as smoking cessation, pulmonary rehabilitation – support for mental health and helping patients to self manage.

Key points

- Nurses have a central role in the care and management of people with chronic obstructive pulmonary disease
- Inhaled bronchodilators are the mainstay of drug therapy
- Support for smoking cessation can be important in slowing the progression of the disease
- Too few patients are referred for pulmonary rehabilitation despite evidence of its effectiveness
- Use of self-management plans has been shown to improve patients’ quality of life, while also reducing breathlessness and hospitalisation

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Abstract

Most nurses, not just specialist nurses, will routinely encounter people with chronic obstructive pulmonary disease in their care. Although there is no cure for this progressive respiratory disease, nurses have a crucial role in its treatment and management, including helping patients to minimise and control their symptoms, and improve the quality of their lives. This article, the second in a two-part series, describes treatment and management options when patients are stable and during events, such as exacerbations, when their condition deteriorates. It describes the safe, effective use of inhaled and oral drug treatments and oxygen therapy, as well as non-pharmacological interventions – such as smoking cessation, pulmonary rehabilitation – support for mental health and helping patients to self manage.

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into the airways and should be selected on the basis of patients’ ability to use them competently.

Short-acting beta-2 agonists (SABAs), such as salbutamol and terbutaline, are used to relieve breathlessness (dyspnoea) and associated exertional limitation. Long-acting beta-2 agonists (LABAs), such as formoterol and salmeterol, and long-acting muscarinic antagonists (LAMAs), such as tiotropium, umeclidinium and aclidinium, provide ongoing maintenance therapy to help control COPD symptoms. They are frequently used in combination. LAMA/LABA inhalers are suitable for patients who have no asthmatic features in their signs and symptoms.

Inhaled corticosteroids (ICSs) are helpful in patients who demonstrate some degree of steroid responsiveness and asthmatic features, and those who have frequent exacerbations (more than two in a 12-month period) or hospitalisations. They are generally used in combination inhalers alongside LABA medication, but are associated with increased risk of pneumonia in patients with COPD (Kew and Seniukovich, 2014). They should be used with caution and withdrawn in patients who do not experience frequent exacerbations.

Triple therapy – comprising LABA, LAMA and ICS – can be considered for patients who remain symptomatic despite treatment (NICE, 2018a) (Fig 1).

Patients should be informed about, and understand:

- The possible side-effects of oral inhalers (for example, oral candidiasis, hoarse voice, dry mouth);
- How to reduce their risk of developing these side-effects (D’Ancona, 2015);
- The role of their inhalers and spacer devices;
- Appropriate storage and cleaning instructions.

Oral therapy

Oral corticosteroids are not recommended for routine maintenance treatment; patients who cannot be weaned off steroids should have their dose reduced to as low as possible and be started on osteoporosis prophylaxis, to counter side-effect of steroid use (NICE, 2018a). However, oral corticosteroids have an important role during acute exacerbations, patients can be given a short course of tablets lasting for 7-14 days (NICE, 2018a).

Antibiotics may be necessary during an exacerbation where infection is suspected, for example, in the presence of increased volume of sputum or darker sputum colour.

NICE (2018b) recommends first-line oral antibiotic treatment with amoxicillin, doxycycline or clarithromycin; options for intravenous antibiotics include amoxicillin, co-amoxiclav, clarithromycin, co-trimoxazole and piperacillin with tazobactam. Although routine sputum testing is not recommended, poor response to treatment should prompt a change of antibiotic.

Oral slow-release theophylline can be used in patients who are unable to manage inhalers, although there is lower consensus over its efficacy in COPD (The Lancet Respiratory Medicine, 2018). This requires monitoring plasma levels to titrate the dose correctly, and monitoring patients for the medication effects and any adverse effects. A reduced dose may be needed for patients with comorbidities, or when starting antibiotics in the macrolide or fluoroquinolone groups due to possible reduced drug clearance (NICE, 2018a).

Mucolytic therapy may be helpful in patients with a productive cough who struggle to expectorate effectively (NICE, 2018a). Prophylactic antibiotic treatment with optimised inhaled therapy can be considered in patients with ongoing sputum production who do not smoke but experience frequent (four or more) exacerbations per year, prolonged exacerbations or exacerbations leading to hospital admission (NICE, 2018a).

Oxygen therapy

Oxygen therapy is used to correct hypoxaemia, rather than prevent or treat breathlessness; it should be prescribed with caution in patients with COPD after arterial blood-gas assessment. An indication to refer a patient for long-term oxygen therapy assessment is a reliable pulse oximetry reading <92%.

Long-term oxygen therapy is indicated in patients with an arterial partial pressure of oxygen (PaO2) when stable of <7.3kPa, or <8kPa with comorbid symptoms of peripheral oedema, pulmonary hypertension or secondary polycythaemia – high concentration of red blood cells in blood – (NICE 2018a). Nurses need to be alert to the safety issues associated with oxygen therapy, particularly the risk of burns and fire, and falls and trips.

NICE (2018a) recommends that patients who still smoke after being offered smoking cessation support and referral to specialist smoking cessation services (discussed later in this article) should not be offered home oxygen therapy routinely. However,
practice varies and British Thoracic Society guidelines recommend patients are:
- Informed of the reduced benefits of oxygen if they smoke;
- Given written safety instructions and alerted, along with their relatives, to the fire risk (Hardinge et al, 2015).

Ambulatory oxygen offers improved exertional endurance to patients who desaturate on exercise and demonstrate improved exercise capacity while breathing supplementary oxygen (NICE, 2018a), but it should only be prescribed following a structured assessment undertaken by a specialist.

Emergency oxygen in patients at risk of hypercapnic respiratory failure, including those with COPD, should be prescribed and administered to maintain an oxygen saturation of 88–92% (O'Driscoll et al, 2017).

Smoking cessation

For patients who smoke, smoking cessation is probably the most important measure they can take to improve their long-term prospects and slow the progression of the disease. Nurses can help by promoting smoking cessation, offering treatment and/or signposting to smoking cessation services. Two starting points are:
- A simple three-step approach – Ask, Advise, Act (Box 1).
- Very Brief Advice on Smoking, developed by the National Centre for Smoking Cessation and Training (Bit.ly/SmokingAAA), and recommended by the Department of Health (Wright, 2013).

The NHS Long Term Plan demonstrates a clear commitment to promoting smoking cessation, with the intention of creating a ‘smoke-free society’ (NHS England, 2019). As an example, it highlights evidence demonstrating improved quit rates using brief personalised counselling, timely provision of nicotine replacement or medication, and follow up. Nurses are well placed to play a central role in this smoking cessation strategy, which will deliver considerable health benefits across the population.

Pulmonary rehabilitation

Pulmonary rehabilitation (PR) for COPD is a structured exercise and education programme shown to improve exercise capacity, quality of life, symptoms, and levels of anxiety and depression (NICE 2016). It has long been recognised as a valuable and important intervention in COPD management (BTS, 2014). Nurses should actively promote, screen and refer patients to PR and also support educational components of rehabilitation programmes.

The NHS Long Term Plan states that only 13% of eligible patients are offered PR, despite evidence that 90% will benefit from improved quality of life and exercise tolerance (NHS England, 2019). Although the reasons for this low uptake are unclear, it may be caused by low awareness of both the availability of PR and the strength of supporting evidence.

Anxiety and depression

Generalised anxiety, phobias and panic attacks are more common in people with COPD compared with the wider population (Abelew and Alexopoulos, 2014). Holistic nursing assessment has a key role in identifying anxiety and depression, and there is evidence to support the role of nurses in delivering a cognitive behavioural therapy approach to help patients with COPD manage the two conditions (Heslop-Marshall et al, 2018).

Education and self-management

Nurses have a central role in educating patients on disease management and equipping them to understand their condition and live as well as they can. Patients need to understand the long-term nature of their condition and that, although there is no cure, much can be done to mitigate symptoms and optimise their quality of life.

COPD self-management plans are typically patient-held documents containing information and advice to support people on their COPD journey. This can include factors such as managing shortness of breath, staying active, eating well and inhaler medication, along with possible side-effects and goal setting. Self-management plans should be patient specific, so they reflect individual needs and priorities. There is evidence to support the use of self-management plans for patients with COPD – a Cochrane meta-analysis found improved health-related quality-of-life scores, reduced self-described breathlessness (dyspnoea) and lower respiratory and all-cause hospitalisation as a result of self-management plans (Lengerink et al, 2017).

Nurses have a critical role in ensuring patients can self-manage in terms of recognising symptoms and dealing with exacerbations appropriately, with steroids and/or antibiotics where necessary. There is scope to draw up self-management plans with patients, support self-management and help patients work towards health-related goals.

When patients deteriorate and become more dependent on family, friends, and health and social care staff, nurses have an important role to play in providing support, information and education for formal and informal carers. This may include staff education and training – specialist nurses are particularly well equipped to deliver this because of their specialist knowledge of COPD management.

Resources to support patient education are available from a number of organisations; as an example, the British Lung Foundation (www.blf.org.uk) provides clear and accessible patient information, available in print and online.

Preventing hospital admission

In secondary care, widespread adoption of hospital-at-home and early-discharge schemes have succeeded in reducing length of hospital stay (Echevarria et al, 2018). There are also numerous examples of integrated care and multidisciplinary teams engaged in managing COPD that successfully bridge the gap between primary and secondary care; the Respiratory Action Network for the Benefit of Wolverhampton (RAINBOW) group (Bit.ly/RainbowCOPD) is one example.

In primary care, nurses are key in managing and monitoring stable patients, and supporting patients’ ability to self-manage their condition.

Nursing care

Many nursing roles are ideally placed to support patients to live well with COPD. As discussed in part one, COPD has no cure and, although medication can help to
mitigate some of the symptoms, it cannot alter the inevitable course of the disease – exacerbations can feature, particularly as COPD becomes more severe. The need for ongoing routine surveillance, and the possibility of escalating treatment regimes, brings patients into frequent contact with nurses, and the alignment of the nurse’s role with the notion of enablement and health promotion means many interventions they deliver and support can improve patients’ lives and wellbeing.

NICE endorses the role of specialist COPD or respiratory nurses in the multi-disciplinary team, and the specialist nurse role sits easily with many of the elements of care and treatment recommended by the organisation. The specialist nurse role varies between primary and secondary care and acute treatment, chronic management and surveillance (NICE, 2018a).

**Conclusion**

COPD is a complex disease that places a considerable burden on individuals in terms of physical symptoms, and reduced mental and social wellbeing. The chronic nature of the disease, and occurrence of exacerbations, will cause patients to access health services multiple times for routine and acute assessments in the course of their COPD journey. Nurses in both primary care and acute-care settings will encounter COPD patients on a regular, even frequent, basis and have a central role to play in meeting their health and social needs. NT

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**Chronic obstructive pulmonary disease series**

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