

Opinion

Self Management of Chronic Obstructive Pulmonary Disease (COPD) in Primary Care

Introduction

Self management in chronic obstructive pulmonary disease (COPD) is usually taken to mean the self management of acute exacerbations. While this is important, other critical aspects of self management include smoking cessation, exercise, nutrition and stress management. This opinion sheet concentrates on exacerbations. In patients with moderate to severe COPD, exacerbations are a major determinant of quality of life and prognosis. Exacerbations result in significant costs to the NHS.^{1,2} It is estimated that 54% of direct costs are a result of in-patient hospitalisations;¹ since the mid-1990s emergency admissions for COPD have risen by 50%, and have now reached 1 million bed days.^{1,3} The earlier the treatment for COPD exacerbations is initiated the better the outcome: thus, action plans which encourage early correct management have considerable potential to save resources.⁴

The National Institute for Clinical Excellence (NICE) COPD guideline provides clear evidence on the management of exacerbations; little advice is given about the use of action plans. This differs from the Scottish Intercollegiate Guidelines Network (SIGN) British Thoracic Society (BTS) asthma guidelines, in which action plans have prominence. There is strong evidence for action plans in asthma, but not in COPD. While the evidence exists for the individual steps within COPD action plans, when used as an intervention, COPD action plans themselves lack evidence of effectiveness.⁵

How should exacerbations be managed?

The first line treatment of worsening of breathlessness should be bronchodilators. Patients should be given treatment that can be delivered effectively during an exacerbation, for example, a spacer

or nebuliser - and should be given clear instructions on the maximum dose to take. COPD exacerbations may be divided into 'purulent' exacerbations associated with bacterial infection and 'mucoïd' exacerbations which are not associated with bacterial infection and do not respond to antibiotics.⁶ The NICE guidelines recommend antibiotics if sputum becomes purulent irrespective of other factors.² Oral steroids are indicated if the patient previously responded to these drugs, fails to respond to an increase in the dose of bronchodilator or if this is their first presentation of airflow obstruction.² Patients who fail to respond adequately need advice as to how to seek help appropriately.

Effective self management has the following components:

- Recognition of changes in the patient's condition and their significance
- Actions to take immediately e.g. medication and seeking help.
- Provision of materials necessary to take the actions

Thus patients need education, a clear plan of action and access to medication.

Types of action plans

Action plans range from the size of a credit card to a whole book. A simple step by step guide is usual with a symptom-based description of the patient's baseline condition and degrees of deterioration, such as "your breathing is normal for you", "your breathing is much worse". They then describe the actions to be taken at each step. Traffic light colours are often used to signify the hazard. Some action plans include peak flow charts, but these are more important in asthma where changes in airway calibre occur faster and need action; in COPD peak flow is less relevant. Some action plans incorporate colour charts to indicate the likelihood that antibiotics will be effective.⁷

Central to COPD exacerbation self-management is early antibiotic and /or oral steroid treatment. Home supplies are useful, but prescribing does need to be monitored. Although there is a solid body of evidence demonstrating the value of asthma action plans, limited data is available about COPD action plans in the literature. Watson *et al.* have shown that action plans reduced admissions for exacerbations.⁸

Why use action plans?

The main function is to empower patients to take control of their condition and by acting appropriately save themselves and the NHS problems. Early treatment can improve the impact of the exacerbation.⁴ Delay in seeking medical attention in the presence of serious problems can be fatal; for example, a myocardial infarction or pulmonary embolus can be mistaken for an exacerbation. Patients need to know that chest pain demands urgent medical assessment. Most patients report that they have not been told when to call an ambulance. Action plans give a patient and their carers / family a sense of control which is important in the face of alarming breathlessness. Admission to hospital is more likely if a call comes at midnight than at midday - seeking help at the appropriate time saves admissions.

The action plans can include useful contact details such as telephone numbers for NHS Direct, the GP surgery - including contact details of the practice nurse - and other details such as contact information for respiratory specialist nurses, oxygen suppliers etc.

Who are action plans for?

Action plans should be provided for anyone who has COPD exacerbations and is likely to find it helpful. Exacerbations occur at all grades of airflow obstruction. Clearly, those with more severe disease should benefit

more, since in early (or mild) disease an exacerbation may cause few problems. The cost of an exacerbation depends on where the patient is treated: mild, self treated £14.81; moderate, treated in primary care £95; severe, in-patient in hospital £1,658.⁹ A reasonable approach is to offer action plans to patients with two or more exacerbations per year and FEV₁<50% of expected. There is recent evidence that those most in need are less likely to have written action plans.¹⁰

Establishing self management using written action plans

Planning and Development of Plan

A 'whole system' approach is needed to establish the use of written COPD action plans in a general practice. The plan should be chosen and adapted for local use including local contact numbers. The receptionist should be informed that if a patient with COPD says they have an exacerbation they should be seen the same day, just as they would with a patient with acute asthma. A system for provision of prescribed emergency drugs is mandatory, some patients can safely manage a supply of antibiotics and prednisolone at home, others may abuse it. Prescribing of these drugs should be monitored and therefore it is usual to keep them on "acute" rather than on "repeat" prescribing lists so that each prescription can be checked by the signing doctor. Overuse of oral steroids is surprisingly common.

Amending

Action plans require the patient to take a degree of control of their disease - an agreed joint strategy of action is required between patient and clinician. Carers and relatives may need some input. Action plans will need to be flexible enough to be amendable to accommodate personal situations. This might include statements about ventilation in patients with advanced or terminal illness. Individual risk factors may be included, such as allergies and previous hypercapnic exacerbations.

Emergency advice

The following features suggest an emergency and would indicate the need for urgent medical attention; unresponsive breathlessness, chest pains, high fever, new onset of peripheral oedema or cyanosis, confusion and/or drowsiness. Clearly the patient would need transfer to hospital urgently in an ambulance if symptoms are severe. Hospitalisation will also be required if the deterioration is sudden,

the patient is already on oxygen therapy, there are poor social circumstances and hypoxia is present - i.e. oxygen saturation <92% on pulse oximetry. (Oxygen may be given to correct hypoxia, but may cause hypercapnia. Patients at risk should be warned, and if in doubt give enough oxygen to keep the SaO₂ to just above >90%.)

After an attack

After an exacerbation, the patient should be advised to seek review of their treatment regime to ensure that they are on optimum drug therapy - long acting bronchodilators, inhaled steroids and mucolytics can all reduce exacerbation frequency. Long term oxygen therapy, pulmonary rehabilitation and smoking cessation may also reduce exacerbations and should be considered after an exacerbation.

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What is COPD?

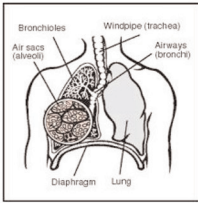
COPD stands for chronic obstructive pulmonary disease - an umbrella term for a number of conditions, including chronic bronchitis and emphysema, which affect breathing

Chronic bronchitis: Bronchitis means inflammation of the airways carrying air through the lungs. This increases mucus production in the airways producing phlegm. It also damages the airways causing them to become narrower and making it harder for air to get in and out of the lungs.

Emphysema: This is where the air sacs (alveoli) in the lungs are damaged, leading to difficulty absorbing oxygen.

The most common cause of COPD is cigarette smoking. Occupational factors, such as mining, and some inherited problems can also cause COPD.

Cough, phlegm and shortness of breath suggest COPD. The sooner treatment is sought the better. The diagnosis is made using spirometry, a 'breathing' test often done at your GP's surgery. It is important to keep fit and active. Some centres run pulmonary rehabilitation courses. These programmes involve exercise and education and can improve quality of life.



Example action plan - Reproduced with permission - Dr Rupert Jones.

Plymouth COPD Action Plan

COPD cannot be cured once you have it, but treatments may help. For most people, stopping smoking slows down its progression. It is likely that you will be given inhalers that open the airways, called bronchodilators. Other medications may also be prescribed.

If you become suddenly more short of breath and your symptoms worsen, you may be experiencing an 'exacerbation'. Your doctor may give you a short course of steroids for a few days. Some people take a steroid inhaler regularly. Exacerbations are common in COPD, always seek prompt treatment for an exacerbation.

A flu vaccination every autumn is also worthwhile. Try to keep as mobile as you can, look after your weight and eat a balanced diet.

COPD Action Plan

WHAT ACTION TO TAKE IF YOUR SYMPTOMS GET WORSE:

Step 1

Check the colour of your sputum:

Cough sputum onto a white tissue.

If your sputum colour has changed from clear or pale to a darker shade e.g. yellow or green : **start ANTIBIOTICS.**

RELIEVER TREATMENT

via Inhaler or Nebuliser

Maximum dose...../.....times per day

Maximum dose...../.....times per day

ANTIBIOTICS

Please take your home supply or obtain a prescription without delay from the surgery.

PREDNISOLONE

Take 30mg once daily (6 x 5mg tablets) For 5-10 days.

Step 2 Look at table

Symptoms	OK	CAUTION	ACTION
Breathlessness	Normal/ Usual	Worse than usual	Much worse than usual
Cough	Normal/ Usual	More than usual	Much more than usual

If all of your symptoms are in the **green OK column** continue usual treatment.

If any of your symptoms are in the **orange CAUTION column:** Increase your **RELIEVER TREATMENT**, take regular up to maximum dose. Keep a close eye on your symptoms, if you improve within 2 days resume usual treatment.

If **NO improvement** start **PREDNISOLONE.**

If any of your symptoms are in the **red ACTION column** Take maximum reliever treatment and start **PREDNISOLONE immediately.**

WARNING

At any time if you get


Severe symptoms: If you have symptoms in the **red ACTION column**, have tried medication and you are not getting better, please **contact your doctor/nurse for an urgent appointment**

EMERGENCY

If you have any of the following:

- Very short of breath
- Chest pains
- High fever
- Feeling of agitation, fear, drowsiness or confusion

DIAL 999 AMBULANCE



Oxygen

In an emergency please do not use **high flow oxygen.** Give sufficient oxygen to reach the target saturation:% (usual range 88-92%)

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