

# The Appropriate Use of Rescue Packs



**Fran Robinson**, discusses the use of rescue packs with Dr John Hurst, Honorary Consultant at the Royal Free London NHS Foundation Trust and Reader in Respiratory Medicine at University College (UCL) London

NICE recommends prescribing rescue packs for patients with COPD at risk of having an exacerbation, which has resulted in them becoming widely used.<sup>1,2</sup> But are they always prescribed and used appropriately?

"It is easy to prescribe a patient antibiotics and steroids and say 'go away and take them when you feel an exacerbation is coming on'", says Dr John Hurst, Honorary Consultant at the Royal Free London NHS Foundation Trust and Reader in Respiratory Medicine at University College (UCL) London.

But this is not an effective strategy because it may result in misuse of the medication unless you back the prescription up with education about how and when (and when not) to use the medication. "A rescue pack is more than just a prescription, it needs to be tied in to other aspects of a patient's care," he says.

Dr Hurst, who has clinical and research interests in exacerbations of COPD, says there is insufficient evidence to show that rescue packs in themselves are safe and cost effective at reducing hospital admissions. However, there is Cochrane evidence to show that self-management is associated with outcomes such as a reduction in hospitalisation.<sup>3</sup> But there is a big difference between effective self-management and the simple prescription of a rescue pack.

"The problem is that, when looking at the effectiveness of rescue packs from a research perspective, it is more complicated than just investigating the outcome of prescribing steroids and antibiotics to be taken at home. This is because a rescue pack should be linked with an educational intervention and the impact of that complex intervention, and assessing fidelity to the intervention, is more difficult to assess."

According to Dr Hurst, rescue packs are both over- and under-used. "We certainly see some GPs who feel uncomfortable prescribing them, and that is OK if you can facilitate a patient's urgent access to the

practice when they are developing an exacerbation. Indeed, in some ways that might be a better standard of care than giving them a rescue pack to take at home – but this is very difficult to implement for many practices."

"Other clinicians are comfortable with giving patients rescue packs on repeat prescription and ensuring that the patient is well educated about when and how to use them. However, if patients do not understand the risks of overusing the medication, they may run the risk of long-term complications. Overuse of steroids is linked with adrenal suppression, osteoporotic fractures, diabetes, pneumonia, psychosis, thinning skin and cataracts, and overuse of antibiotics (or not taking them for the full course) risks antimicrobial resistance both in the individual patient and in our society."

## Identifying patients who are suitable for rescue packs

So how do you select the patients who will benefit from a rescue pack? "It is about recognising which patients are willing and able to self-diagnose and start treatment at the start of an exacerbation. You are asking a patient to differentiate an exacerbation from the day-to-day ebb and flow of symptoms, and that can be challenging for healthcare professionals, let alone those living with COPD. So this is not just about self-management; it is also about self-diagnosis and patients are not trained diagnosticians. They know more about their own symptoms than anybody else, of course, but some people can misinterpret their day-to-day symptom variations as an exacerbation."

Dr Hurst says it is patients who are susceptible to frequent exacerbations (at least two a year) who are most likely to benefit from rescue packs. These patients will know what an exacerbation feels like. "There isn't any point giving a rescue pack to a patient who hasn't had an exacerbation because they will not have experienced those symptoms before, and they will be at less risk of future events," he says.

Before considering prescribing a rescue pack, Dr Hurst says the clinician must first make sure that all the high value interventions for COPD have been employed to reduce the risk and consequences of exacerbations. These include smoking cessation, influenza vaccination, pneumococcal vaccination, pulmonary rehabilitation and optimisation of pharmacotherapy to ensure the patient is using the right combination of inhalers.

Then the clinician must assess whether the patient is willing and able to take the rescue medication as directed and has been well educated on how and when to use it.

## Education

Patients need to be taught:

- How to recognise the start of an exacerbation (eg, whether there has been a change in the volume, purulence or colour of the phlegm they produce normally and whether they are experiencing breathlessness or wheeze).
- About the risks and benefits of the treatment
- Alarm symptoms – things to be alert for that are not typically part of an exacerbation or things that might mean something different is going on.
- They must contact their healthcare professional if they have started their treatment to alert them that they have become unwell
- As a safety net, patients should be told that, if their symptoms feel different from their usual exacerbation, then taking the rescue may not be the right thing to do and they must also call for help from their community respiratory team or GP

## Is it time to stop prescribing rescue packs in COPD?

This is a question Dr Hurst will be answering in a presentation to the PCRS-UK conference in September. "No is the answer, but we can and must do it better," he says. "We need to do more research into the subject otherwise, if we don't address this question, we will be having the same discussion in 10 and 20 and 30 years' time. The studies are not going to be easy and they will be expensive, but they are needed if we want to improve what we are currently doing," he argues.

One study already in the pipeline is a National Institute for Health Research (NIHR) Health Technology Assessment (HTA) Programme proposal for research into the use of sputum colour charts which could help patients more accurately detect a change in their sputum symptoms before starting a course of antibiotics.

There is also promising evidence that the prescription of steroids may be better guided by looking at blood eosinophils. Point-of-care meters may in future be used in primary care to assess the blood eosinophil

## Learning points

- Patients who are most likely to benefit from a rescue pack are those at risk of frequent exacerbations (at least two a year) and who can recognise when an exacerbation is starting
- Before prescribing a rescue pack:
  - First make sure all the key high-value interventions for COPD have been employed to reduce the risk and consequences of exacerbations and that the patient has a self-management plan
  - Assess whether the patient is willing and able to take the medication as prescribed
  - Make sure the patient has been educated about the risks and benefits of treatment and of overusing the medication
  - Ensure the patient has a safety net: advise them that, if their symptoms feel different from their usual exacerbation, then taking the rescue may not be the right thing to do and they must also call for help from their community respiratory team or GP

counts of patients. This will help primary care clinicians to more accurately assess whether a patient will benefit from prednisolone at the time of exacerbation.

For now, Dr Hurst says the best option for patients with COPD is to ensure they have a really good self-management plan, and are empowered to manage their disease through attendance at a pulmonary rehabilitation programme. Those who would benefit from having rescue packs at home should be prescribed them with the necessary educational support and safety netting.

## References

1. Chronic obstructive pulmonary disease in over 16s: diagnosis and management. NICE guideline CG101, June 2010. <https://www.nice.org.uk/guidance/cg101>
2. Clinical Knowledge Summaries: Chronic obstructive pulmonary disease. NICE guideline, September 2015. <https://cks.nice.org.uk/chronic-obstructive-pulmonary-disease>
3. Self-management interventions including action plans for patients with chronic obstructive pulmonary disease (COPD). Cochrane, August 2017. [http://www.cochrane.org/CD011682/AIRWAYS\\_self-management-interventions-including-action-plans-patients-chronic-obstructive-pulmonary-disease](http://www.cochrane.org/CD011682/AIRWAYS_self-management-interventions-including-action-plans-patients-chronic-obstructive-pulmonary-disease)

### **NICE recommendations<sup>1</sup>**

Patients at risk of having an exacerbation of COPD should be given self-management advice that encourages them to respond promptly to the symptoms of an exacerbation by:

- Starting oral corticosteroid therapy if their increased breathlessness interferes with activities of daily living (unless contraindicated)
- Starting antibiotic therapy if their sputum is purulent
- Adjusting their bronchodilator therapy to control their symptoms
- Patients at risk of having an exacerbation of COPD should be given a course of antibiotic and corticosteroid tablets to keep at home for use as part of a self-management strategy
- It is recommended that a course of corticosteroid treatment should not last longer than 14 days as there is no advantage in prolonged therapy
- The appropriate use of these tablets should be monitored
- Patients given self-management plans should be advised to contact a healthcare professional if their symptoms do not improve
- Patients should contact a primary healthcare professional if they start treatment with a home supply of medication. This is to ensure that medications are taken appropriately; that the exacerbation is recorded; an attempt is made to identify any trigger for the exacerbation; and the home supply of rescue medication is replaced.<sup>2</sup>

### **What should be in a COPD rescue pack?**

NICE<sup>2</sup> recommends that a COPD rescue pack is part of a self-management plan to enable patients to manage a deterioration in their symptoms (onset of exacerbation) promptly and reduce their risk of hospital admission.

A COPD rescue pack should include:

- Prednisolone 30 mg orally to be taken for 7–14 days. It is recommended that a course of corticosteroid treatment should not be longer than 14 days as there is no advantage in prolonged therapy
- Oral antibiotics for people with purulent sputum or clinical signs of pneumonia depending on local antibiotic prescribing guidelines:
  - Prescribe amoxicillin 500 mg three times daily for 5 days, or if there is a true allergy to amoxicillin, doxycycline 200 mg on the first day then 100 mg once daily for a total of 5 days
  - If amoxicillin and doxycycline are contraindicated, prescribe clarithromycin 500 mg twice daily for 5 days
  - If the person has an increased risk of antibiotic resistance (comorbid disease, severe chronic obstructive pulmonary disease (COPD), frequent exacerbations or antibiotic use in the past 3 months), prescribe co-amoxiclav 500/125 mg three times daily for 5 days

\*An update on the NICE COPD guideline is expected to be published in November 2018.

## Patient's perspective of rescue packs

We asked our Lay Reference Group (Neil Jackson, John Hubbard, Barbara Preston and Mary Lettington) what they felt about rescue packs

Most members of the group have rescue packs at home and say they feel confident that they know when they need to take them and at what point they need to contact a healthcare professional.

Neil Jackson, who has alpha-1 antitrypsin deficiency, has a standby pack of clarithromycin antibiotic tablets he keeps in the fridge. When prompted by the interview for this article he found they were nearly a year out of date.



Neil Jackson

He says the colour of his mucus is the trigger to take the antibiotics and his consultant, Professor Robert Stockley, Consultant Respiratory Physician at University Hospitals Birmingham, has conducted studies correlating mucus colours with various degrees of infection and produced some helpful colour charts for patients.



John Hubbard

John Hubbard, who has relapsing polychondritis, says he understands his symptoms well and monitors his health daily and is confident about taking the steroid and the antibiotic in his rescue pack at the right time when he is feeling ill. "Both my

consultant and various GPs are happy that I do this", he says.

But Barbara Preston, who has bronchiectasis, says: "To people like myself, the key treatment is intervention as early as possible to squash any infections as these only lead to more inflammation and scarring, making the condition worse each time. However, it's not always clear cut when to take antibiotics and there's a danger of 'playing chicken' and waiting till something has got a hold."



Barbara Preston

Mary Lettington, who has COPD and emphysema, says she feels that, when prescribing rescue packs, healthcare professionals need to be familiar not just with the patient's condition, but also their social situation and treatment history. "Rescue packs are desirable but need to be set within a prescribed framework. That framework should require every person to have a needs-led assessment which would then generate a customised rescue pack with relevant conditions attached, specific to that patient and their capacity to use the pack wisely."

Barbara Preston comments: "Some patients will err on the side of taking their medication too often, others not soon enough. Patients need as much education as possible and healthcare professionals need to know their individual patients."