

Management of acute asthma

In the third issue of BPJ we discussed the current debate around the management of acute asthma for people on long acting beta agonists (LABAs). In this issue we pose four scenarios and ask Respiratory Physician, Professor Robin Taylor, for his advice in these situations.

Consider how you would respond to the scenarios and then read Professor Taylor's comments.

1 Ms Rees is a 22-year-old retail assistant with asthma. You have recently been able to reduce her high inhaled corticosteroids (ICS) dose by adding an inhaled LABA and she is currently taking fluticasone (Flixotide) 250 micrograms bd and salmeterol (Serevent) 25 micrograms bd in separate inhalers. She wants to combine these into a single inhaler (Seretide 250) for the sake of convenience and you agree.

In the past she has been in the habit of doubling her daily dose of fluticasone if she gets a mild exacerbation of her asthma or a URTI. She asks what she should do now she is on a combination inhaler. **What do you recommend?**

Professor Robin Taylor's comments

The use of a combination inhaler is a logical step forward in most patients whose asthma is well controlled on both an ICS and a LABA (subject to Special Authority application). The fact that her total dose of ICS can be reduced is also an advantage.

Doubling the dose of inhaled steroid during an exacerbation has been shown not to provide any benefit in the management of exacerbations. It is now obsolete as a management strategy, thanks to the advent of evidence from appropriately designed trials.

More recently there has been a series of studies in which the use of regular plus as-required formoterol/budesonide has been compared with regular combination plus as required short acting beta-agonist (SABA). The strategy is known as adjustable maintenance therapy (AMT) — in which the patient needs to have only one type of inhaler (Symbicort). The results to date demonstrate an advantage in using the former regimen. This strategy is based on the fact that formoterol has a rapid onset of action and can be used as a 'reliever' and the patient simultaneously gets an additional dose of inhaled steroid. Thus Symbicort may be used in this way, but not Seretide.

What remains unclear is whether this approach is valid in all patients or only in selected groups. This question will probably be answered over the next 2–3 years. My own concern relates to the patients whose 'prn' use of beta-agonist is problematic. Those who rely on too much SABA and do not take enough inhaled steroid ought theoretically to gain from this — assuming that their asthma is steroid sensitive and current symptoms **are due to poor asthma control** and not something else. Some patients may be prone to taking reliever to excess for psychological as well as truly disease-related reasons, in which case the possibility of steroid overuse might arise. To date there has been only limited experience using AMT in New Zealand and it may be that increasing familiarity will help to identify where the potential problems really lie. However AMT is not suitable for this woman because she is on Seretide.

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Mr Ingram is an 18-year-old student with asthma and features of atopy. His asthma has been present for as long as he remembers and he lost quite a lot of time from school because of it. However for the last two years he has been well controlled on budesonide 400 micrograms bd and eformoterol 12 micrograms bd in a combined inhaler (Symbicort Turbuhaler). He presents with worsening asthma that he attributes to his flatmate getting a cat.

History and examination confirm the diagnosis of asthma. He has scattered rhonchi, a pulse of 110 per minute and PEFR of 75% of his recent best result. **What do you recommend?**

Professor Robin Taylor's comments

"No amount of treatment will overcome the effects of daily exposure to high levels of allergen"

Students experience a number of potential exacerbating factors especially around age 18 or 19 when they move away from home:

- Exposure to the cat may be very important. Skin prick testing (SPT) of the patient will confirm whether he is allergic or not. If so the answer is simple — get rid of the cat. No amount of treatment will overcome the effects of daily exposure to high levels of allergen
- By definition students are poorly compliant with treatment. The figures suggest that this group take around 20% of prescribed inhaled steroid!
- Poor compliance with anti-inflammatory treatment may go hand in hand with excessive use of beta-agonist and more than 6/7 puffs per day of salbutamol or the equivalent is pro-inflammatory
- Consider whether his allergy is also giving rise to rhinitis. If so, nasal blockage can result in mouth breathing which in turn may exacerbate airway responsiveness. Treat accordingly
- Consider whether stress factors are important. This may be the case if he is facing severe academic pressures or has just moved from home for the first time

His observations suggest moderately severe asthma. A young man of 18 with a peak flow of 75% and an elevated pulse rate is in poor shape. Treat as for acute severe asthma but do not stop his maintenance treatment.

3 Ms Richards is a 22-year-old secretary who is getting married next week. She has asthma which is usually well controlled on salmeterol 25 micrograms bd and fluticasone 250 micrograms bd in a combined inhaler (Seretide 250). Her asthma is flaring up and she is concerned that it will ruin her wedding day.

History and examination do not suggest a diagnosis other than her asthma. Her chest is wheezy, her pulse is 110 per minute and her PEFr is 75% of her recent best result. **What do you recommend?**

4 Mrs Morrison had asthma as a child and thought she had outgrown it during adolescence. Five years ago when Mrs Morrison was 45-years-old the asthma returned and was quite difficult to get under control. However for the last two years she has been achieving good control with fluticasone (Flixotide) 250 micrograms bd and salmeterol (Serevent) 25 micrograms bd. She has a rescue inhaler but rarely uses it. The rest of her health is good.

She is visiting her daughter on the West Coast. She arrived one week ago and her asthma has become quite troublesome and she needs to use her rescue inhaler every two hours because of wheezing and tightness in her chest.

History and examination in the surgery does not raise suspicion of anything except worsening of her asthma. She has scattered wheezing, a pulse of 110 per minute and PEFr of 75% of her recent best result. **What do you recommend?**

Professor Robin Taylor's comments

All that was said about Mr Ingram applies to Ms Richards. However, in addition, there is a pragmatic aspect. Weddings are important. I would prescribe prednisone 40 mg/day as usual for three days rather than five to seven days. Then I would reduce the dose to 10 mg/day assuming there is some improvement. Thereafter I would maintain this dose for two weeks or even longer until the patient has returned from her honeymoon, before re-evaluating her inhaler maintenance drug therapy. This dose is low enough that it will not cause side effects (in a young woman headaches, bloating feelings, ankle oedema) but high enough in most young asthmatics that it will help to maintain control of her asthma.

Professor Robin Taylor's comments

When a patient, who is well controlled rapidly becomes uncontrolled, a trigger for the poor control needs to be sought. In this woman's case the immediate possibilities include:

- She has developed a viral lower respiratory tract infection which is exacerbating her asthma
- She has forgotten to bring her inhalers to the West Coast and has been without steroid 'protection' for the previous five days. However the average time from stopping ICS till the advent of loss of control is actually longer i.e. 17 days.
- She has been exposed to a trigger which is unusual for her. This might include an allergen e.g. horses or she may have taken a NSAID (one tablet can do it!)

The management includes:

- Removing identifiable triggers if present
- A course of oral prednisone for five to seven days
- Use of a spacer to deliver inhaled steroids especially if her peak flow is very low

There is no particular comment to be made regarding LABA in this case. The standard dose may continue as already prescribed. There is no good reason to change the dose of inhaled fluticasone. There is no particular advantage to be gained from a combination product.