ASTHMA: Keeping in STEP with the guidelines

The BTS / SIGN guidelines recommend a stepwise approach to the management of asthma in both adults and children. Locally, the Regional Respiratory Advisory Group have developed a supporting tool for the implementation of the BTS/SIGN guidance and a copy is included as an Appendix to this supplement. Patients should start treatment at the step most appropriate to the initial severity of their asthma.

Careful consideration should be given to the following before the introduction of any new drug therapy:
- Check medication adherence and inhaler technique
- To check adherence always check prescription records in the previous 12 months
- Never increase asthma medication without review of prescription filling and discussion with the patient.

Current practice - how are we doing?

Recent research carried out by Prof. Liam Heaney and colleagues, Belfast Trust, looking at combination inhaler prescriptions dispensed in Northern Ireland between 2010 and 2011 found that between 52% and 67% of asthmatic patients prescribed a combination inhaler (Step 3) had not been issued with a prior corticosteroid inhaler (Step 2) within the previous 6-12 months.

In addition, research by Jacqui Gamble, Belfast City Chest Clinic, highlights the problems of poor adherence with inhaled therapy in patients attending difficult asthma clinics.

Further to this research work, a clinical review of combination inhaler prescribing for asthma in primary care has been carried out in a sample of practices. This clinical review focused on the management of the patient’s asthma in the 12 months preceding the initiation of the combination inhaler.

Out of 188 asthmatic patients who had their asthma management reviewed, almost a quarter of these patients moved directly from Step 1 to Step 3 i.e. they had not been prescribed a single agent inhaled corticosteroid within the previous 12 months.

However, considerable variation was seen between GP practices: in one GP practice, only 7% of patients had not received a single agent inhaled corticosteroid inhaler within the 12 months; in another practice, 45% of patients moved straight from Step 1 to Step 3 (a combination inhaler).

Some examples from practice

Inappropriate prescribing – Step 1 to Step 3
Patient A, aged 26 years
Combination inhaler first prescribed by GP when patient consulted due to increase in symptoms during exercise. In the 12 months prior to initiation of combination inhaler, the patient had not been issued with ANY asthma medication. No record that a questionnaire of symptoms had been completed or that inhaler technique had been checked at the time of the initiation of combination inhaler.

Step 2 not optimised: steroid dosage “too low” / non-compliance with therapy
Patient B, aged 22 years
In the 12 months prior to the initiation of the combination inhaler, the patient had been prescribed beclometasone 50mcg, one puff twice a day (100mcg daily) but had only been issued with 2 inhalers in those 12 months. In this 12 month period, the patient had an asthma-related admission to hospital and had been treated with oral steroids.

Patients over-ordering short-acting beta agonists (relievers)
Patient C: 92 Ventolin® inhalers in the previous 12 mths
Patient D: 48 Ventolin® inhalers in the previous 12 mths
Patient E: 46 Ventolin® inhalers in the previous 12 mths

Learning points
The above examples highlight some of the issues that can occur in practice when guidelines are not followed. Implementation of the key messages above will help to ensure better outcomes for our patients with asthma.
How to calculate % inhaler adherence from prescription records

Doses per inhaler = number of days inhaler should last
Number of daily doses prescribed

% adherence = \( \frac{\text{number of inhalers issued}}{\text{number of inhalers required}} \) \times 100

Example: Symbicort® 200/6, 4 puffs twice a day

\[
\begin{align*}
120 \text{ doses} & = 15 \text{ days} = 2 \text{ inhalers per month} \\
8 \text{ puffs per day} & = 12 \text{ inhalers per 6 months}
\end{align*}
\]

Therefore the patient will require 12 inhalers per 6 months
Prescription records show patient collected 4 inhalers in last 6 months

\[
% \text{ adherence} = \frac{4 \times 100}{12} = 33%
\]

How to check inhaler adherence during the consultation

Prior to consultation, calculate % inhaler adherence as shown above
Undertake asthma assessment / review, taking into account areas relevant to adherence:
Asthma control – e.g. Royal College of Physicians (RCP) 3 questions
http://www.rcplondon.ac.uk/publications/measuring-clinical-outcome-asthma

Inhaler technique – check technique / understanding of device etc (see page 3)

Discuss prescription records depending on level of adherence identified

100% adherence with good control - brief discussion - acknowledge and reinforce benefits of good adherence
100% adherence with poor control - check are they actually using it as prescribed / correctly
50% adherence with good control - consider step down
50% adherence with poor control - more in-depth discussion - look for reasons or issue
Patient Review

**Patients whose therapy is not optimised**

Asthmatic patients who should be prioritised for review include:

- patients who have had high quantities of short-acting Beta agonist SABA (reliever) prescribed in the previous 12 months. National Review of Asthma Deaths (NRAD) recommends urgent review for patients getting >12 SABA per year
- patients prescribed courses of oral steroids in the previous 12 months
- patients who have had an asthma-related hospital admission
- patients prescribed frequent courses of antibiotics for respiratory tract infections

**Patients who may be suitable for “Stepping Down”**

- Step-down should be considered for those patients whose disease has been stable for at least 3 months
- Treatment should be at the minimum level required to maintain disease control
- Regular review and step-down of treatment is essential to prevent over-treating
- Step-down of inhaled corticosteroid (ICS) therapy should be slow (25-50% dose reduction every 3 months until low dose ICS is achieved). BTS/SIGN guidance suggests that this is realistic and possible without compromising patient care
- When on a combination of long-acting beta-agonist (LABA) and ICS, the ICS should be reduced to low dose (as above) before stopping the LABA

Concordance interview tips

Good communication is important, such as using open sentences, establishing a rapport, non-confrontational, positive empathetic approach etc.

Suggested questions:-

- What inhaler/s, doses, times /day do you take?
- Would you ever miss taking your inhalers? We find usually most people forget sometimes, it’s normal to forget every now and then
- What reminds you to take it? Is it part of your daily routine? Use lifestyle to direct questions, e.g. sports, work, hobbies, does poor asthma control affect ability to take part – use to encourage adherence. Routine is important as an aide memoire.
- Our records show you haven’t perhaps picked up as many prescriptions as we would like; is there a particular reason for this?

Use as an example, some people are worried about side-effects or don’t like the device

Check inhaler technique- do you like your inhaler? do you have any side effects?

Don’t give the impression non-adherence is abnormal behaviour!!

Inhaler technique

BTS/SIGN guidance recommends that all patients should have their inhaler technique checked and reinforced at each review visit.

150 professionals were asked to demonstrate how they would self-administer a pMDI placebo inhaler. Health care professionals included hospital doctors, hospital nurses, GPs, practice nurses, hospital and community pharmacy staff. 74 were from primary care and 76 from secondary care.

Each professional was marked against a standard check list set by the manufacturer and Education for Health UK. They were also asked to demonstrate the correct inspiratory flow rate using the In-check dial device.

113 (75%) of the participants said they were involved in the teaching of inhaler technique. Of these 113, only 11(9%) could demonstrate all the recognised steps.

This was a small study 3, and we wouldn’t want to overstate the results. It does, however, suggest that health professionals involved in teaching inhaler technique might well benefit from having their own technique checked.

Asthma UK have a section on their website with videos demonstrating how to use all types of inhaler [http://www.asthma.org.uk/knowledge-bank-treatment-and-medicines-using-your-inhalers](http://www.asthma.org.uk/knowledge-bank-treatment-and-medicines-using-your-inhalers)

This can be a useful resource for both healthcare professionals and patients

*When was the last time you refreshed your knowledge of inhaler technique??*
This newsletter has been produced for GPs and Pharmacists by the Regional Pharmacy and Medicines Management Team and the Respiratory Team, Belfast Trust. If you have any queries or require further information on the contents of this newsletter, please contact one of the Medicines Management Pharmacists in your local HSCB office.

**Eastern Area Office:** 028 9536 3926  
**Northern Area Office:** 028 9536 2835  
**Southern Area Office:** 028 3741 4622  
**Western Area Office:** 028 7186 4341

### References
1. BTS/SIGN British guideline on management of asthma, October 2014  

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### Examples of inhaler doses *

<table>
<thead>
<tr>
<th>Drug</th>
<th>Brand</th>
<th>Inhaler type</th>
<th>Dose / inhalation (micrograms)</th>
<th>Number of doses</th>
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<tbody>
<tr>
<td><strong>Steroid</strong></td>
<td>beclometasone</td>
<td>generic</td>
<td>Dry powder inhaler</td>
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<td></td>
<td>Clenil Modulite®</td>
<td>Metered Dose Inhaler (MDI)</td>
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<td></td>
<td>Qvar®</td>
<td>MDI / Autohaler® / Easi-breathe®</td>
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<td>200</td>
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<td>Asmabec®</td>
<td>Clickhaler® (dry powder)</td>
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<td>200</td>
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<td></td>
<td></td>
<td>250</td>
<td>100</td>
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<tr>
<td><strong>Budesonide</strong></td>
<td>generic</td>
<td>Dry powder inhaler</td>
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<td>200</td>
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<td></td>
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<td>100</td>
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<td></td>
<td>Pulmicort®</td>
<td>Turbohaler® (dry powder)</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
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<td>400</td>
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<td>Evohaler® (MDI)</td>
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<td>Accuhaler® (dry powder)</td>
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<td>MDI</td>
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<td>60 or 120</td>
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<tr>
<td><strong>Mometasone</strong></td>
<td>Asmanex®</td>
<td>Twisthaler® (dry powder)</td>
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<td>30 or 60</td>
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<td>400</td>
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<td>Fostair® (MDI)</td>
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<td>budesonide/formenterol</td>
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<td>Spiromax® (dry powder)</td>
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*(Please refer to the BNF for the full list of available products and dosing information)*