Tackling overuse of short-acting beta-2 agonists (SABAs) in asthma in primary care

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Overview

There are more than 5 million people with asthma in the UK, with more than 800,000 (17%), suffering from severe or difficult to control asthma. It is these patients with the more severe, exacerbation prone disease that are more likely to be admitted to hospital and account for the most significant health service utilisation.

Evidence base

Overuse of SABAs has been recognised as a problem for many years. The National Review of Asthma Deaths (NRAD) found the following evidence:

“There was evidence of excessive prescribing of reliever medication. Among 189 patients who were on short-acting relievers at the time of death, the number of prescriptions was known for 165, and 65 of these (39%) had been prescribed more than 12 short-acting reliever inhalers in the year before they died, while six (4%) had been prescribed more than 50 reliever inhalers. Those prescribed more than 12 reliever inhalers were likely to have had poorly controlled asthma.”

As a result the NRAD report advises – “All asthma patients who have been prescribed more than 12 short-acting reliever inhalers in the previous 12 months should be invited for urgent review of their asthma control, with the aim of improving their asthma through education and change of treatment if required.”

The management of asthma in the UK is based on guidance from NICE and BTS/SIGN guidance. As management of asthma has evolved (in line with national guidance), it is clear that SABAs play a smaller role in the management of asthma. Their use in monotherapy is not generally supported in the guidelines, although there are those with infrequent, short-lived wheeze and normal lung function in whom monotherapy with a SABA may be sufficient.

National strategy

NHS England has outlined a programme to improve the treatment and support of people with respiratory disease and deliver the commitments outlined in the NHS long term plan. Hospital admissions for lung disease have risen over the past seven years at three times the rate of all admissions generally and therefore medicines optimisation in relation to respiratory medicines remains a key focus for the NHS.

In relation to asthma and Medicines Management the NHS long term plan advises –

“We will do more to support those with respiratory disease to receive and use the right medication. 90% of NHS spend on asthma goes on medicines, but incorrect use of medication can also contribute to poorer health outcomes and increased risk of exacerbations, or even admission. Pharmacists in primary care networks will undertake a range of medicine reviews, including educating patients on the correct use of inhalers and contributing to multidisciplinary working. As part of this work, they can also support patients to reduce the use of short acting bronchodilator inhalers and switch to dry powder inhalers where clinically appropriate, which use significantly less fluorinated gases than traditional metered dose inhalers. Pharmacists can also support uptake of new smart inhalers, as clinically indicated.”

Review of the use of SABAs in patients is therefore supported by the national long term strategy. When reviewing SABA use it is important to consider the type of device a patient is using and where possible encourage (with education) to have all the patients inhalers switched to those which use significantly less fluorinated gases. It is important that when switches take place to minimise patients being left on different types of devices (mixture of MDI and DPI) as this would affect outcomes in these patients.

Pharmacological management of asthma

The aim of asthma management is control of the disease. In practice subjective asthma control is defined by the Royal College of Physicians (RCP) questions – this tool is also recommended by NICE.

The usual primary care measure (QOF indicator) measures the percentage of patients with asthma, on the asthma register, who have had an asthma review in the last 12 months with an assessment of asthma control using the three RCP questions.

Good control is defined as – over the last month

• no daytime symptoms
• no night-time awakening due to asthma
• no need for rescue medication
• no asthma attacks
• no limitations on activity including exercise
• a normal lung function (in practical terms FEV1 and/or PEF >80% predicted or best)
• minimal side effects from medication.

BTS/SIGN guidance advises to consider moving up the pharmacological management ladder if using three doses a week or more of the SABA.

The average salbutamol inhaler contains 200 puffs and each dose is two puffs. Therefore controlled asthma would be where a person uses one inhaler per year (taking two or less doses a week). In other words individuals who use more than one inhaler per year indicate an episode of uncontrolled or partially controlled asthma. This suggests a restriction of twelve inhalers per year is a high limit and in practice supports the idea that once we have very few patients using 12 SABA inhalers a year a lower future threshold could be defined.

Inhaler technique

Poor inhaler technique is associated with poor asthma control. It is vital that patients receive the appropriate training to use their prescribed inhaler properly. This may take several consultations and regular checks on technique for success to be achieved and maintained. It is widely recognised that deficiencies in inhaler technique exist in both patients and healthcare professionals. Broadly speaking using inhalers well can be problematic for many patients, even those who believe they have good technique!

There are two main types of inhaler device: Metered dose inhalers (MDI) and dry powder inhalers (DPI). These two different device types require very different inhaler technique. Studies suggest that patients who are prescribed both types of inhaler have less good outcomes. It is likely that this is because of poor inhalation technique with at least one, if not both devices. Therefore at medication review it can be useful to standardise the inhaler device.

Explore other factors

If the patient has good inhaler technique and is adherent to their preventative medication, a search for other factors may help. For example

• The possibility of occupational asthma
• Smoking cessation
• Other triggers like allergen.

Local Picture in Herts Valleys CCG

Asthma is a major driver to acute care episodes. A local review of the latest available NHS Right Care commissioning for value – Respiratory focus pack [9] indicated that NHS Herts Valleys CCG was an outlier in 2016 as

• Prevalence of asthma was lower than that of similar CCGs
• Non-elective spend on asthma was 20% higher than similar CCGs.
• Spend on SABAs at Herts Valleys CCG was higher than that of the best 5 CCGs &
• Acute care episodes were higher than comparable CCGs.

Implementation of a local project

The above information was discussed with GP stakeholders and it was agreed to prioritise and support work in this area. The following steps were taken to support the work:

1.1 Using prescribing records to identify over-prescribing of SABAs.

Prescribing data was run using EMIS Enterprise to understand the number of SABA inhalers that were being issued to patients with a diagnosis of asthma over a period of 12 months. EMIS Enterprise is a system that allows the CCG to pull information from the computerised notes and prescribing system most commonly used in our area (EMIS). The information enables us to ask clinical staff to focus on doing clinical work without them needing to submit data to demonstrate the changes made, as we can pull information centrally. Consents have to be in place to use this system, but because the data produced is anonymous patient level consent is not required. We have a small number of SystmOne practices where we do not have the pull system in place these practices had to provide audit data to demonstrate their achievement of the targets set.

This information was shared with the individual practices so that they could understand the scale of the problem.

EMIS Enterprise searches run in the CCG use pseudo-anonymised data and for the searches to be relevant to the practice the data would need to be attributable to an individual patient. Therefore a search was also designed that could be shared with all practices to upload so that they could have the details at an individual practice and patient level.

Practices were supported to upload the data and instructions were provided on how to manipulate the data so that the practices could see number of inhalers issued per patient over the last 12 months. Practices were encouraged to review all patients who had been issued 8 or more inhalers over the last 12 months. They were advised to prioritise the patients by number of inhalers issued.

It was agreed that the review of these patients aligns with the strategic vision of the CCG for respiratory care and would be included in the CCGs long term conditions specification. The long term conditions specification financially incentivises member GP practices to deliver evidence based best quality outcome for patients.

By following this process practices could plan ahead and over time book in the higher risk patients for review at their practice and by following the stepwise guide in local and national guidance reduce the overuse of SABA inhalers, while identifying any patients that had uncontrolled or partially controlled asthma. This was supported with education for health care professionals.

1.2 Local guidelines to support management of chronic asthma in adults* and education

It was agreed that respiratory training events will be developed together with the consultant led community
respiratory service to provide training to general practice staff to improve respiratory outcomes. The training aimed at increasing awareness of local guidelines on management of chronic asthma and supporting healthcare professionals in addressing safety concerns related to SABA overuse. Formal feedback on the training sessions went directly to the consultant led community respiratory provider and we received a summary which suggested that the training sessions were well received. We became aware though the training that we needed to reach the specialist nurses in respiratory care not just GP leads, who are the traditional group that we usually provide prescribing training sessions for.

Separately a community pharmacy training event on respiratory medicines was conducted as this would support with medication review in line with local and national guidelines and inhaler technique support when conducting Medicines Use Reviews (MURs) and New Medicines Services (NMS). It was also recognised that the Centre for Pharmacy Postgraduate Education (CPPE) provide a session on inhaler technique that community pharmacists and clinical pharmacists in GP practices were encouraged to undertake.

For patients it was recognised that patients could be signposted to right breathe or asthma UK to access training on appropriate inhaler and spacer use. The right breathe website also includes an on-line app that patients may also find useful.

1.3 Regular feedback sessions

The GP prescribing lead for each practice attends a locality prescribing meeting that is held every two months. These meetings provide an opportunity to benchmark progress with CCG objectives, to share knowledge and/or discuss any concerns.

Meetings were therefore used to develop shared learning and highlight areas like:

- Reviews need to be individualised. For example patients may have misunderstood the instructions and be taking the SABA twice daily and the preventer on an as needed basis.
- When conducting the review, monitor quantities of the preventer medication. The patient may be taking their preventer medication only sporadically. In particular this may be due to misconceptions with use of steroid containing medication. In such situations, the rationale for preventer treatment must be made known to the patient in the context of an individual personal risk / benefit assessment.

Outcomes

- **An overall reduction in the use of SABAs**

  The project was run in 2017 to 2018 and it resulted in a 7% (12,000 inhalers) reduction in the number of SABA inhalers prescribed by practices in the CCG. This reduction in use of SABAs has continued to further improve as data from 2019 shows a further 3% (5,000 inhalers) reduction in SABA use.

  At the end of the project a number of practices were audited. The audits demonstrated a reduction in the number of patients who were on 12 or more inhalers. The project helped increase awareness of the need to monitor SABA use and it has been incorporated into asthma reviews.

Open prescribing is a national database that is freely available to the public and has a safety indicator that looks at prescribing of SABA compared to prescribing of inhaled corticosteroids and SABA. The indicator provides a trend and encouragingly for Herts Valleys CCG (see Graph 1 below)
A reduction in asthma related emergency activity and costs

The project was run in 2017-2018 and the corresponding emergency asthma related activity (and cost) across the CCG showed a 25% (£110k) reduction. This continued to improve in 2018-2019 with a further 10% decrease in activity (£26k reduction in cost). In 2019-2020 there has been an increase in activity although reassuringly the activity remains 25% (£100k) below that at 2016-2017 (period prior to undertaking the project). Overall the data is encouraging and in line with clinical expectations. The project has supported identification and review of patients who over use SABAs and have poorly controlled asthma. Patients have had their treatments optimised resulting in better outcomes as reflected in lower emergency activity and costs.

When setting up a project of this nature it is important that commissioners work with the delivery partners e.g. Specialist respiratory services, GPs, third sector support (Asthma UK) and that the plan is co-ordinated with local guidelines and education to support the change. It is encouraging to see that there has been a decrease in the number of patients who have a high use of SABAs, reduced asthma related emergency activity and that the change has been maintained. This suggests there has been an overall improvement in asthma control and that the project has supported healthcare professionals deliver better care and patients achieve better respiratory outcomes. It also demonstrates that while reducing overuse of SABA inhalers sounds simple to do - it needs considerable support to bed this into routine practice. We believe this work will be of interest to others because it could be replicated and we feel it is important because overuse of SABAs is a risk factor for sudden death in asthmatic patients.

Table 1 showing admissions data for asthma related emergency activity and costs by financial year for Herts Valleys CCG

<table>
<thead>
<tr>
<th>Activity - Total</th>
<th>Costs - Total</th>
</tr>
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<tbody>
<tr>
<td>2016-17</td>
<td>£727,109</td>
</tr>
<tr>
<td>2017-18</td>
<td>£616,272</td>
</tr>
<tr>
<td>2018-19</td>
<td>£590,480</td>
</tr>
<tr>
<td>2019-20</td>
<td>£626,681</td>
</tr>
</tbody>
</table>

Declarations of interests

NICE guideline development group member for - Emergency and acute medical care in over 16s: Service delivery and organisation [NG94 – Published March 2018].

References

1. Asthma UK – Asthma facts and statistics - https://www.asthma.org.uk/about/media/facts-and-statistics/
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