Asthma control in general practice – GP and patient perspectives compared

Background
How general practitioners (GPs) and patients perceive asthma control, and concordance between these perceptions, may influence asthma management and medication adherence. The aims of this study were to determine asthma prevalence in adult patients, measure patient asthma control and the correlation between GP and patient perceptions of asthma control or impact.

Methods
A Supplementary Analysis of Nominated Data (SAND) sub-study of the Bettering the Evaluation and Care of Health (BEACH) program surveyed 2563 patients from 103 GPs. Asthma control was measured using the Asthma Control Questionnaire 5-item version (ACQ-5), and medication adherence by patient self-report. Survey procedures in SAS software and Pearson’s correlation statistics were used.

Results
Asthma prevalence was 12.7% (95% confidence interval: 10.9–14.5), with good correlation between GP and patient perceptions of asthma control/impact, and with raw ACQ-5 scores. Grouped ACQ-5 scores showed higher levels of uncontrolled asthma. Medication adherence was sub-optimal.

Discussion
The ACQ-5 questions are useful for assessing asthma control, for prompting medication reviews, and for reinforcing benefits of medication compliance to improve long-term asthma control.

Keywords
communication, doctor–patient relations; general practice; asthma; respiratory tract diseases

Historically, asthma treatment guidelines have focused on asthma severity, but in recent years the emphasis has shifted to asthma control, aiming to improve asthma management in the primary care setting.1,2 Good asthma control minimises day and night symptoms, limitation of activity, airway narrowing and the consequent need for bronchodilator use, and risk of exacerbations.3–5 Poor adherence to preventive medication is an acknowledged reason for poor asthma control,6 and several qualitative studies have explored the reasons for patients’ non-adherence to medication regimens.7,8

Patients’ attitudes to their asthma and perception of their asthma control are suggested reasons for dissonance between recommended and actual medication use.9,10 How clinicians perceive their patients’ asthma control, and the concordance between the two perspectives, may also influence asthma management and the patient’s disease.10 The few international studies conducted have found concordance between patients and physicians perceptions of asthma control to be low,11,12 but this has not been investigated in Australia.

The aims of this study were to determine the prevalence of asthma in adult patients (18 years and older) attending general practice, the (measured) level of asthma control in these patients, the general practitioners’ (GPs’) perception of the patients’ asthma control and the patients’ perceptions of the impact of asthma on their lives. Any correlations between the perceptions of asthma control and measured asthma control score were also investigated.

Method
This study was conducted through a Supplementary Analysis of Nominated Data (SAND) sub-study of the Bettering the Evaluation and Care of Health (BEACH) program. BEACH is a continuous, national, cross-sectional survey of Australian general practice activity. The BEACH methods are described in detail elsewhere,13 but in brief, each year approximately 1000 randomly sampled, currently active recognised GPs are recruited. The GPs record details for 100 consecutive encounters with consenting, unidentified patients, on structured paper forms. Information is collected about what is managed for each patient at each visit on the days the GP is participating. Throughout the program, a series of SAND sub-studies are carried out. These utilise the GP as an ‘expert interviewer’ to record, in discussion with the patient, aspects of patient health additional to the content of the encounter. For this sub-study, 125 GPs were posted recording kits containing the asthma control SAND questions. Each GP was asked to survey 30 patients from their sample of 100 over a 5-week period from 10 July to 13 August, 2012.

For each of the sampled adult patients, the GP was asked to record: whether the patient had diagnosed asthma, how the GP rated the patient’s asthma control (poor, partial, well controlled), what impact asthma has on the patient’s life (patient’s perspective), what medications the patient has taken for asthma in the past month, how often the patient has used rescue medications in the past month, how often the patient has had an asthma exacerbation, and risk factors for bronchodilator use. The ACQ-5 questions (shown in Table 1), are
scored on a 7-point scale (0 = good control, 7 = poor control), and the overall score (‘raw score’) is the mean of the five responses.18 Patients’ scores were then classified into three prescribed groups (‘grouped scores’) as having well-controlled asthma (ACQ-5 score < 0.75); not well-controlled asthma (ACQ-5 score 0.75–1.5), or uncontrolled asthma (ACQ-5 score > 1.5).17 For comparability with the GP perception scale and the ACQ-5 which have three asthma-control levels, the patient perception scale categories of ‘not at all’ and ‘a little’ were collapsed to compare with ‘well-controlled’, the ‘moderate’ category was compared with ‘partial control’ and the ‘quite a lot’ and ‘a great deal’ were combined to compare with ‘uncontrolled’.

We calculated proportions and robust 95% confidence intervals using survey procedures in SAS software (version 9.3; SAS Institute, Cary, NC)18 that adjust for the study’s cluster design. Statistical significance of differences was judged by non-overlapping 95% confidence intervals (CI), which improve the interpretation of data because they provide robust upper and lower boundaries for the probable size of the true effect. A sample prevalence estimate was calculated which can be interpreted as the prevalence of asthma among patients who present to GPs at any given time.

Pearson’s correlation statistics were used to measure any correlation between GPs’ opinion of patient asthma control and the patient’s perception of the impact of asthma on their life, GP’s opinion of patient asthma control and actual ACQ-5 scores, and patient’s perception of the impact of asthma on their life with actual ACQ-5 scores.

**Results**

Recording pads were returned by 103 of 125 GPs (82.4%). The age distribution of the patients in this SAND sample (Figure 1) did not significantly differ from that of patients at the 122.5 million general practice encounters claimed across Australia through Medicare in 2011–2012 (personal communication, Department of Health Australia, May, 2012). Completed asthma forms were received for 2563 patients aged 18 years or older.

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Table 3. Correlation between GP and patient perceptions of asthma control and actual ACQ-5 scores

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pearson's correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>GP perception of asthma control</td>
<td>0.6545</td>
</tr>
<tr>
<td>Actual ACQ – scores (ungrouped raw scores)</td>
<td></td>
</tr>
<tr>
<td>Patient-perceived impact</td>
<td>0.7435</td>
</tr>
<tr>
<td>Actual ACQ – scores (ungrouped raw scores)</td>
<td></td>
</tr>
<tr>
<td>GP perception of asthma control</td>
<td>0.6671</td>
</tr>
<tr>
<td>Patient-perceived impact</td>
<td></td>
</tr>
</tbody>
</table>

Table 4. Medication taken for asthma management

<table>
<thead>
<tr>
<th>Asthma medications in last month (n = 414)</th>
<th>Taken how often in the past week? Percentage* (95% CI) (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not at all</td>
</tr>
<tr>
<td>SABA (± other medication) (n = 178)</td>
<td></td>
</tr>
<tr>
<td>(n = 38)</td>
<td>22.2 (16.4–28.1)</td>
</tr>
<tr>
<td>SABA only (n = 43)</td>
<td></td>
</tr>
<tr>
<td>(n = 18)</td>
<td>41.9 (27.4–66.3)</td>
</tr>
<tr>
<td>LABA &amp; ICS (n = 162)</td>
<td></td>
</tr>
<tr>
<td>(n = 11)</td>
<td>7.2 (2.9–11.5)</td>
</tr>
<tr>
<td>LAMA (n = 17)†</td>
<td></td>
</tr>
<tr>
<td>(n = 1)</td>
<td>5.9 (0.0–42.1)</td>
</tr>
<tr>
<td>ICS without LA BA (n = 18)†</td>
<td></td>
</tr>
<tr>
<td>(n = 1)</td>
<td>0.0 (n = 0)</td>
</tr>
<tr>
<td>OCS (n = 14)†</td>
<td></td>
</tr>
<tr>
<td>(n = 3)</td>
<td>23.1 (0.0–57.5)</td>
</tr>
</tbody>
</table>

Asthma medications recorded as taken in the previous month by 245 patients. Frequency of use was reported for 391 of the 414 asthma medications. SABA = short-acting beta agonist; ICS = inhaled corticosteroid; LABA = long-acting beta agonist; LAMA = long acting muscarinic agonist. *Missing data removed † result should be interpreted with caution due to small numbers

Discussion

Nationally, one in eight adult general practice patients has diagnosed asthma, a finding consistent with other national prevalence estimates. There was a high level of agreement about the perceived control/impact of the patient’s asthma between GPs and patients, while the grouped ACQ-5 suggested the patients’ asthma to be less well controlled than either perceived. Medication use for asthma patients was sub-optimal. There is evidence from the literature that patients with well-controlled asthma may still experience exacerbations, particularly during respiratory infections. These data were recorded in July and August, which are winter months when patients are most likely to suffer a respiratory infection that may trigger their asthma. This increases the likelihood that they experienced respiratory symptoms in the previous week, even when their asthma was reasonably well controlled previously. This may explain why the ACQ-5 grouped scores for asthma symptoms experienced during the previous week indicated a greater proportion of patients with poorly controlled asthma than either GPs or patients perceived, given their ‘opinion’ is based on a year-round perspective.

It is also possible that patients have become used to the impact of asthma on their lives, and,
having not communicated the existence and/or recurrence of symptoms, lead the GP to believe that their asthma is better controlled than it is in reality. The correlation coefficients show a moderate-to-high level of agreement between the GP and patients’ perceptions of asthma control, and on each of these with the individual ACO-5 scores. However, agreeing on the level of control does not mean that control could not be significantly improved, and the ACO-5 has highlighted this group.

This study also highlights issues with asthma medication. No medication use was recorded in the preceding month for one quarter of patients. Only 18 (5.5%) patients were taking ICS without LABA, which is the recommended first-line treatment. Given the recommended ICS/LABA regimen is twice-daily (i.e., 14 times per week),22 it is a concern that only 57.5% of patients were compliant with guidelines. SABA use was high, with 53.8% taking it three or more times in the previous week; more than half of these took SABA more than 10 times and 13.2% of patients were medicating solely with SABA. Both are indicators of loss of asthma control.22 We do not know whether these patients had not been prescribed long-term preventive therapy, or were not adhering to their GP’s recommendations. Investigating asthma control related to medication use would have been informative, but numbers were too small for reliable conclusions.

Implications for general practice

The ACO-5 is a useful tool to opportunistically assess asthma control during consultations. A sizeable proportion of patients with asthma presenting to general practice have indicators of a loss of asthma control. The ACO-5 questions may prompt medication reviews, reinforcing the benefits of compliance and enhancing self-management skills, which will improve long-term asthma control.

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Competing interests: None.

Ethics approval

The BEACH program and all SAND sub-studies are approved by the Human Research Ethics Committee of the University of Sydney (Ethics protocol Ref. No. 11428).

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References


