

EDITORIAL

# Outcomes of the Cochrane Airways Group International Conference

*Peter G. Gibson, Senior Staff Specialist, Department of Respiratory and Sleep Medicine, John Hunter Hospital, and Conjoint Associate Professor, Faculty of Medical and Health Sciences, University of Newcastle, Newcastle, New South Wales*

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The Cochrane Airways Group and the Commonwealth Department of Health and Aged Care held a meeting in Newcastle in March this year to discuss systematic reviews in asthma, and how these might be implemented to encourage good clinical practice.

Understanding best evidence is an essential part of good clinical practice. This can improve health when combined with an evaluation of the patient's clinical status and treatment preferences. The cornerstone of best evidence comes from systematic reviews of randomised controlled trials. The Cochrane Airways Group produces systematic reviews of treatment for asthma, chronic obstructive pulmonary disease, bronchiectasis, sleep disordered breathing, and pulmonary fibrosis. Asthma is a particularly topical area as the Commonwealth Department of Health and Aged Care has made it a national health priority.

The Cochrane Airways Group involves over 230 reviewers and 12 editors worldwide. This group has produced 47 systematic reviews on the treatment of asthma from the results of trials involving 37 525 patients.<sup>1</sup> A recent independent evaluation of systematic reviews in asthma confirmed the high quality of these reviews.<sup>2</sup>

## In this issue...

Peter Gibson tells us how studying the evidence from clinical trials can guide the management of common conditions such as asthma.

There is limited evidence about the effectiveness of post-exposure prophylaxis, but Frank Bowden suggests when it is indicated after a needle-stick injury.

Warfarin is indicated in a growing number of patients, many of whom are elderly. Alex Gallus and colleagues advise us on how to minimise the risks of warfarin therapy in the community.

While Parkinson's disease is thought of as an older person's problem, Kay Messiter's case reminds us that it can affect younger people. Victor Fung and colleagues update us on the management of this condition.

## Systematic reviews and guidelines

Guidelines for the management of asthma are typically consensus-based documents that are periodically updated. Asthma reviews from the Cochrane Airways Group are an important resource that can be used to update guidelines and enable the use of best evidence to strengthen recommendations. The meeting reviewed several guideline recommendations in the context of the results of recent Cochrane reviews. The results (see box) show that systematic reviews can improve asthma guidelines by identifying other treatment modalities, quantifying the benefit of a treatment, or resolving disagreement between guidelines.

### Inhaled corticosteroids

Three main corticosteroids (beclomethasone, budesonide and fluticasone) are used in the treatment of asthma. These drugs can be given via several different devices across a dose range that varies 40-fold. Systematic review of 709 trials involving 2443 patients showed a significant benefit for beclomethasone over placebo, with an average improvement in FEV<sub>1</sub> of 340 mL. Fluticasone achieved the same benefit at 50% of the dose, suggesting increased potency. There was evidence of a dose-response effect with fluticasone, both for improvement in lung function and for increased oropharyngeal adverse effects.

These studies support the use of low doses of inhaled corticosteroid up to fluticasone 200 microgram/day, or beclomethasone/budesonide 400 microgram/day. The benefit of a higher dose is marginal and the adverse effect profile escalates. In Australia, the doses of inhaled corticosteroid used tend to be much higher. The reviews question this practice and reinforce the need to reduce the dose to the minimum needed to maintain asthma control.

## Implementing recommendations from reviews

Systematic reviews seek to summarise the best available evidence. However, this alone does not necessarily ensure that clinical practice will change. The meeting examined the best ways to implement the results of a review or guideline recommendation in an Australian context, using the delivery of bronchodilator by nebuliser or by puffer/spacer as an example. A systematic review found that in acute asthma,

**Cochrane systematic reviews can improve guidelines**

<i>Guideline recommendation</i>	<i>Systematic review results</i>	<i>Impact of review</i>
Administer beta agonist by nebuliser	Delivery by puffer/spacer has similar efficacy to nebuliser <sup>3</sup>	Review identifies an alternative treatment modality
Administer oral corticosteroid	Reduces risk of hospitalisation by 60%, NNT* = 8 <sup>6,7</sup>	Review quantifies benefit of treatment
Aminophylline <ul style="list-style-type: none"> <li>• 2nd line therapy (UK guidelines)</li> <li>• use is uncertain (Australian guidelines)</li> </ul>	Aminophylline of no additional benefit to beta agonist, but has increased adverse effects <sup>8</sup>	Review recommends against use of aminophylline (because of adverse effects)

\* Number needed to treat

delivery of a beta agonist by puffer/spacer has similar (in adults) or improved (in children) efficacy with fewer adverse effects (in children) compared to delivery by nebuliser.<sup>3</sup> This contrasts with Australian practice where nebulisers are often used to give a beta agonist in acute asthma.

Two studies presented at the meeting detailed methods used to encourage the use of a puffer/spacer in acute asthma. Simply mailing the guideline with educational material had no impact on clinical practice. In both studies, a positive change in clinical practice was seen when a multifaceted intervention based upon available evidence was used.<sup>4</sup> The target audience needs to be defined, and the message tailored to the needs and interests of that audience. Successful interventions use several components including local adaptation of evidence-based guidelines that are widely disseminated to medical managers and implemented through respected opinion leaders, supported by interactive educational sessions delivered by peers, and reinforced by reminders at the point of prescribing. The best results have been obtained from a multifaceted intervention involving audit and feedback.<sup>5</sup> These studies show that it is possible to change clinical practice using the results of a systematic review to implement best evidence. However, even for a relatively simple intervention, a structured, evidence-based approach is required to ensure success.

### Researching asthma outcomes

The large number of clinical trials reviewed by the Cochrane Airways Group provide an opportunity to examine the design of research studies. A key area is that of outcome measures in asthma. There are many outcomes used in asthma research, and each is reported in a variety of ways. For example, the lung function outcomes can be reported as end of study values, or change from baseline, and expressed either in absolute terms, as a percentage of the predicted value or as a percentage of the baseline value. The ability of these measures to detect change (sensitivity), and their reliability across studies has been examined using data from the systematic reviews of the Cochrane Airways Group. These results have shown that changes from baseline provide the most sensitive and reliable measures of response in asthma clinical trials, and FEV<sub>1</sub>

appears to be the best measure of airway function. Morning and evening measurements of peak expiratory flow have equal utility to each other and perform better than measures of variability in peak flow.

### Conclusion

The outcomes of the conference identified clear directions for improving the health of people with asthma. Guidelines based on systematic reviews can give clear recommendations and help standardise and improve the level of care delivered to people with asthma. Understanding the requirements for successful implementation of evidence-based guidelines will increase the likelihood of their success. Reducing corticosteroid doses and unnecessary nebuliser use in line with the recommendations of systematic reviews can minimise unnecessary drug dosing and costs, and possibly adverse effects. These outcomes also suggest opportunities for enhancing good clinical practice in asthma.

E-mail: [mdpgg@mail.newcastle.edu.au](mailto:mdpgg@mail.newcastle.edu.au)

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