



# Managing acute mild asthma in the emergency department

## Why is this important?

Asthma is a common condition that continues to increase in Australia and globally. The prevalence of asthma in Australia is among the highest in the world, with over two million people affected [1].

Despite the condition becoming more common, the number of people dying from asthma in Australia has fallen [1,2]. This is likely to be due in part to the promotion of 'best-practice' care, better self-management and preventive care by government, health care professionals and organisations such as the National Asthma Council [2].

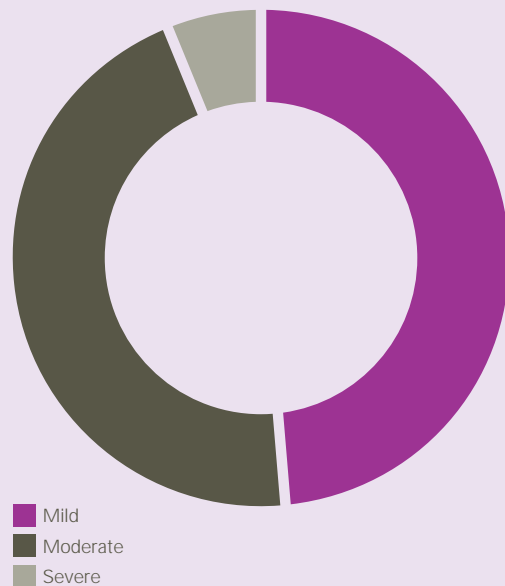
Nonetheless, any patient with asthma may experience an acute deterioration requiring medical intervention, either by a general practitioner or at a hospital emergency department. Indeed, asthma makes up a large proportion of presentations to emergency

departments and patients often re-present with further deterioration over the next 12 months [3–5].

The initial assessment of the severity of an asthma episode is critical in acute management. A recent multi-centre Australian study has shown that most acute asthma presentations to Australian emergency departments are mild to moderate (95.5 per cent in children and 90.5 per cent in adults) [6]. In the management of severe acute asthma, which makes up only six per cent of cases, the addition of ipratropium bromide to the standard drugs used improves health outcomes with no significant additional side effects [7]. However, it is an expensive treatment and there is little evidence to support its use in cases of moderate severity, and it is not recommended in the management of mild acute asthma [1].

There is substantial evidence that ipratropium bromide is of limited usefulness in acute episodes of mild to moderate asthma.

Severity of asthma in presentations to emergency departments 2000–2001



Source: Kelly AM et al (2003)

### Best available evidence

Numerous clinical practice guidelines recommend that, along with oxygen, corticosteroids and beta2-agonists, multiple doses of ipratropium bromide be used in the management of patients with severe and life threatening asthma attacks, or those with a poor initial response to beta2-agonist therapy [1,8,9]. Australian guidelines indicate that ipratropium bromide use is optional in the management of moderate acute asthma, and recommend against its use in patients with mild acute asthma [1,9].

These recommendations are broadly in line with the findings of two published systematic literature reviews. The reviews, however, do not support the use of ipratropium bromide in the management of moderate or mild attacks.

A Cochrane systematic review [10] of acute asthma in children looked at 13 trials of ipratropium bromide. A single dose of

ipratropium bromide was of no additional benefit in children with mild to moderate asthma. Multiple doses of ipratropium bromide, whilst safe, only had sufficient evidence to support its use in school-aged children with acute severe asthma.

Another evidence-based review [11] found that multiple doses of ipratropium bromide are indicated in the emergency management of children and adults with severe asthma. There was no apparent benefit of adding single doses of ipratropium bromide to those with mild to moderate asthma.

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## Current practice

The *Snapshot of acute asthma* study [6] was a prospective, observational study involving 38 emergency departments in Australia. The study collected data on presentations for asthma for a two-week period in 2000 and the same period in 2001. There were 1,340 presentations in the total 28-day period with a complete data set for 840 children and 421 adults.

In children, nearly 38 per cent of patients presenting with mild asthma and 66 per cent of those presenting with moderate asthma received ipratropium bromide. In adults, the figures were 64 per cent and 83 per cent respectively.

## Implications

- There is substantial evidence that ipratropium bromide is of limited usefulness in acute episodes of mild to moderate asthma. Given that most presentations to the emergency department are mild to moderate in severity, many patients may therefore receive an expensive therapy with little evidence for its efficacy.
- In practice, the formal assessment of asthma severity is not always done as part of routine procedure, which may lead to the over-treatment of many patients with less severe attacks.
- Whilst it is easy to focus on increasing the use of effective treatments when evidence suggests they are not being used, it is equally important that we do not continue to use treatments when there is no evidence to support their application. Using ipratropium

bromide in accordance with best available evidence would provide cost savings without detrimental effects to patients, and minimise the (albeit) small effect of medication reactions.



## References

- 1 National Asthma Council (2002) Asthma Management Handbook 2002. National Asthma Council, Melbourne
- 2 Douglass JA, O'Hehir RE (2003) Emergency treatment of asthma: how are we doing? *Intern Med J* 33: 401–403
- 3 Australian Centre for Asthma Monitoring (2003) Asthma in Australia 2003. AIHW Asthma Series 1. AIHW Cat. No. ACM 1. AIHW, Canberra
- 4 Marks GB et al (2000) Use of 'preventer' medications and written asthma management plans among adults with asthma in New South Wales. NSW Health Department Asthma Data Working Group. *Med J Aust* 173: 407–410
- 5 Goeman DP et al (2004) Back for more: a qualitative study of emergency department reattendance for asthma. *Med J Aust* 180: 113–117
- 6 Kelly AM, Powell C, Kerr D (2003) Snapshot of acute asthma: treatment and outcome of patients with acute asthma treated in Australian emergency departments. *Intern Med J* 33: 406–413
- 7 Stoodley RG, Aaron SD, Dales RE (1999) The role of ipratropium bromide in the emergency management of acute asthma exacerbation: a metaanalysis of randomized clinical trials. *Ann Emerg Med* 34: 8–18
- 8 Scottish Intercollegiate Guidelines Network (SIGN), British Thoracic Society (2004) British guideline on the management of asthma. A national clinical guideline. *SIGN Pub. No.63*. Scottish Intercollegiate Guidelines Network (SIGN), British Thoracic Society, Edinburgh, Scotland
- 9 Therapeutic Guidelines Limited 2000. Respiratory, Version 2, ETG Complete. Available at: <http://www.etg.hcn.net.au/>. Accessed 8 March, 2005
- 10 Plotnick LH, Ducharme FM (2004) Combined inhaled anticholinergics and beta2-agonists for initial treatment of acute asthma in children. *Cochrane Database Syst Rev*: CD000060
- 11 Rodrigo GJ, Rodrigo C (2002) The role of anticholinergics in acute asthma treatment: an evidence-based evaluation. *Chest* 121: 1977–1987