

The National Institute of Clinical Studies is Australia's national agency for improving health care by helping close important gaps between best available evidence and current clinical practice. NICS is funded by the Australian Government.

Prof Chris Baggoley
Chair of the Board

Dr Heather Buchan
Chief Executive Officer

EMERGENCY CARE COMMUNITY OF PRACTICE PROGRAM

The National Institute of Clinical Studies established the Community of Practice for the wide range of clinicians and health managers involved in the delivery of emergency care to share their knowledge and expertise to close evidence practice gaps and improve patient care.

©National Institute of Clinical Studies 2006

This work is copyright. It may be reproduced in whole or in part for educational use subject to the inclusion of an acknowledgment of the source. It may not be reproduced for commercial use or sale.

Disclaimer: Health professionals are advised to use clinical discretion when applying information contained in this document. NICS does not accept any liability for any injury, loss or damage incurred by use of or reliance on the information. NICS cannot guarantee and assumes no legal liability or responsibility for the currency, completeness or accuracy of the information. The views and opinions expressed in this document do not necessarily represent those of the Australian Government.

Author:

A/Prof Steven Doherty
(Adapted from the National Institute of Clinical Studies Evidence – Practice Gaps Report Volume 2).

Reviewers:

Prof Philip Bardin
Prof Anne-Maree Kelly
A/Prof Ian Rogers

Endorsed by:

College of Emergency Nursing Australasia
Australian College of Emergency Nursing
Australasian College for Emergency Medicine
National Asthma Council Australia

For more information:

The Emergency Care Community of Practice
National Institute of Clinical Studies
Fawkner Centre, Level 5, 499 St Kilda Rd
Melbourne VIC 3004
T: +61 3 8866 0400
F: +61 3 8866 0499
E: cop@nicssl.com.au
W: www.nicssl.com.au

Suggested citation:

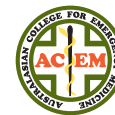
Doherty S (2006) Emergency Care Evidence in Practice Series: Use of Ipratropium Bromide for Acute Asthma. Emergency Care Community of Practice, National Institute of Clinical Studies, Melbourne

Use of Ipratropium Bromide for Acute Asthma

EMERGENCY CARE EVIDENCE IN PRACTICE SERIES

EMERGENCY CARE COMMUNITY OF PRACTICE

ENDORSED BY



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]

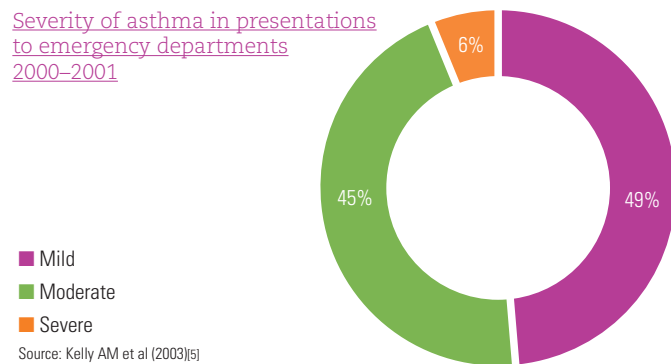
Asthma makes up a large proportion of presentations to emergency departments and patients often re-present with further deterioration over the next 12 months.[2–4]

The initial assessment of the severity of an asthma episode is critical in acute management. A recent multi-centre Australian study has shown that the vast majority of acute asthma presentations to Australian emergency departments are mild to moderate (95.5 per cent in children and 90.5 per cent in adults).[5]

In the management of severe acute asthma, which makes up just six per cent of cases, the addition of ipratropium bromide to the standard drugs used improves health outcomes with no significant additional side effects.[6] However, there is little evidence to support use of ipratropium bromide 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



Use of Ipratropium Bromide for Acute Asthma

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.[1,7,8] 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.[1,8]

These recommendations are broadly in line with the findings of two published systematic literature reviews. A Cochrane systematic review [9] of acute asthma in children found that a single dose of ipratropium bromide was of no additional benefit in children with mild to moderate asthma. Another evidence-based review [10] found that there was no apparent benefit of adding single doses of ipratropium bromide to treatment of those with mild to moderate asthma.

Current practice

The *Snapshot of acute asthma study* [5] was a prospective, observational study involving 38 emergency departments in Australia. 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 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, 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.

Use of Ipratropium Bromide for Acute Asthma



6 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

7 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

8 Therapeutic Guidelines Limited (2000). Respiratory, Version 2, ETG Complete. Available at: <http://www.etg.hcn.net.au/>. Accessed 8 March, 2005

9 Plotnick LH, Ducharme FM (2004) Combined inhaled anticholinergics and beta2-agonists for initial treatment of acute asthma in children. *Cochrane Database Syst Rev*: CD000060

10 Rodrigo GJ, Rodrigo C (2002) The role of anticholinergics in acute asthma treatment: an evidence-based evaluation. *Chest* 121: 1977–1987

1 National Asthma Council Australia (2002) Asthma Management Handbook 2002. National Asthma Council Australia, Melbourne

2 Australian Centre for Asthma Monitoring (2003) Asthma in Australia 2003. AIHW Asthma Series 1. AIHW Cat. No. ACM1. AIHW, Canberra

3 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

4 Goeman DP et al (2004) Back for more: a qualitative study of emergency department reattendance for asthma. *Med J Aust* 180: 113–117

5 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