Bronchiolitis of Infancy Discharge Study (BIDS): a multicentre, parallel-group, double-blind, randomised controlled, equivalence trial with economic evaluation

Steve Cunningham,[1]* Aryelly Rodriguez,[2] Kathleen A Boyd,[3] Emma McIntosh[3] and Steff C Lewis[4] on behalf of the BIDS Collaborators Group

[1]Department of Respiratory and Sleep Medicine, Royal Hospital for Sick Children, Edinburgh, UK
[2]Edinburgh Clinical Trials Unit, University of Edinburgh, Edinburgh, UK
[3]Health Economics and Health Technology Assessment, Institute of Health and Wellbeing, University of Glasgow, Glasgow, UK
[4]Centre for Population Health Sciences, University of Edinburgh, Edinburgh, UK

*Corresponding author

Declared competing interests of authors: Dr Steve Cunningham has the following potential competing interests: (1) current chair of the National Institute for Health and Care Excellence Bronchiolitis Guideline Group; (2) past chair of the Scottish Intercollegiate Guideline Network Bronchiolitis Guideline Group; (3) principal investigator for Alios Pharmaceuticals Phase 1 investigational medicine for treatment of infants with bronchiolitis; and (4) consultancy work on behalf of NHS Lothian for Ablynx Pharmaceuticals Phase 1 product development for treatment of infants with bronchiolitis.

Published September 2015
DOI: 10.3310/hta19710

Plain English summary

Bronchiolitis of Infancy Discharge Study (BIDS)

Health Technology Assessment 2015; Vol. 19: No. 71
DOI: 10.3310/hta19710

NIHR Journals Library www.journalslibrary.nihr.ac.uk

Plain English summary

Bronchiolitis is a viral infection of the lung that most often affects infants. It can be treated with oxygen, but it is not known when it is best to start using oxygen or how much to use. Experts who contributed to two recent guidelines on the treatment of bronchiolitis have different opinions on what blood oxygen level should be used. We compared these two recommended blood oxygen levels (low and normal) in a trial assessing clinical effectiveness and cost-effectiveness. We used blood oxygen monitors that looked identical, but half displayed a value than was higher than the true value.

The infants in both groups had had a cough for the same length of time. Those who received the lower oxygen level appeared to start feeding sooner, and their parents thought that they returned to normal sooner – but these differences were small. There were no safety concerns about using lower oxygen levels; in particular, fewer infants experienced serious adverse events (24 infants) than in the normal oxygen group (32 infants). As expected, infants who received lower oxygen levels received oxygen for a shorter time and went home sooner, but parents were not more anxious and the infants did not need to return to health care more frequently. Parents got back to usual activities more quickly in the lower than normal oxygen group. It was £290 cheaper to treat infants in the lower oxygen group than in the normal oxygen group.

Overall, managing infants with bronchiolitis using a lower oxygen level seems to be just as clinically effective as using a higher oxygen level. It also seems safe and cheaper.

Health Technology Assessment

HTA/HTA TAR

ISSN 1366-5278 (Print)

ISSN 2046-4924 (Online)

Impact factor: 5.116

Health Technology Assessment is indexed in MEDLINE, CINAHL, EMBASE, The Cochrane Library and the ISI Science Citation Index.

This journal is a member of and subscribes to the principles of the Committee on Publication Ethics (COPE) (www.publicationethics.org/).

Editorial contact: nihredit@southampton.ac.uk

The full HTA archive is freely available to view online at www.journalslibrary.nihr.ac.uk/hta. Print-on-demand copies can be purchased from the report pages of the NIHR Journals Library website: www.journalslibrary.nihr.ac.uk

Criteria for inclusion in the *Health Technology Assessment* journal

Reports are published in *Health Technology Assessment* (HTA) if (1) they have resulted from work for the HTA programme, and (2) they are of a sufficiently high scientific quality as assessed by the reviewers and editors.

Reviews in *Health Technology Assessment* are termed 'systematic' when the account of the search appraisal and synthesis methods (to minimise biases and random errors) would, in theory, permit the replication of the review by others.

HTA programme

The HTA programme, part of the National Institute for Health Research (NIHR), was set up in 1993. It produces high-quality research information on the effectiveness, costs and broader impact of health technologies for those who use, manage and provide care in the NHS. 'Health technologies' are broadly defined as all interventions used to promote health, prevent and treat disease, and improve rehabilitation and long-term care.

The journal is indexed in NHS Evidence via its abstracts included in MEDLINE and its Technology Assessment Reports inform National Institute for Health and Care Excellence (NICE) guidance. HTA research is also an important source of evidence for National Screening Committee (NSC) policy decisions.

For more information about the HTA programme please visit the website: http://www.nets.nihr.ac.uk/programmes/hta

This report

The research reported in this issue of the journal was funded by the HTA programme as project number 09/91/16. The contractual start date was in July 2011. The draft report began editorial review in June 2014 and was accepted for publication in November 2014. The authors have been wholly responsible for all data collection, analysis and interpretation, and for writing up their work. The HTA editors and publisher have tried to ensure the accuracy of the authors' report and would like to thank the reviewers for their constructive comments on the draft document. However, they do not accept liability for damages or losses arising from material published in this report.

Published by the NIHR Journals Library (www.journalslibrary.nihr.ac.uk), produced by Prepress Projects Ltd, Perth, Scotland (www.prepress-projects.co.uk).