Improving the Management of Children with Bronchiolitis

The Updated American Academy of Pediatrics Clinical Practice Guideline

Su, Siew; Chang, Anne

Published in:
Chest

DOI:
10.1378/chest.14-2024

Published: 01/12/2014

Document Version
Peer reviewed version

If there is Online Only content that cannot be converted to a Word processing format, you may have to click the Supplemental Files icon on the menu bar in your Reviewer Center to access.

Improving the management of children with bronchiolitis: the updated American College of Pediatrics clinical practice guideline

Journal:	*CHEST*
Manuscript ID:	CHEST-14-2024.R1
Manuscript Type:	Editorial
Date Submitted by the Author:	n/a
Complete List of Authors:	Su, Siew; Queensland Children's Medical Research Institute, Royal Children's Hospital, Qld Children's Respiratory Centre Chang, Anne; Royal Children's Hospital and Menzies School of Health Research, Charles Darwin University, Queensland Children's Respiratory Centre;
Keywords:	Editorial, BRONCHIOLITIS, children, GUIDELINES

Word Count: 890

To accompany manuscript # CHEST-(Not applicable)

Editorial

Improving the management of children with bronchiolitis: the updated American Academy of Pediatrics clinical practice guideline

SC Su[1], AB Chang[1,2]

[1]Qld Children's Respiratory Centre, Queensland Children's Medical Research Institute, Royal Children's Hospital, Brisbane, Qld University of Technology, Qld; [2]Child Health Division, Menzies School of Health Research, Charles Darwin University, Darwin, Northern Territory, Australia

Correspondence to

Prof Anne Chang

Queensland Children's Respiratory Centre

Royal Children's Hospital, Brisbane, Queensland 4029, Australia

Tel: 61 7 36365270 Fax 61 7 36361958

Email: annechang@ausdoctors.net

Conflict of interest statements: AC and SS have no financial conflicts. AC has undertaken studies relating to the management of bronchiolitis and is a panel member for several guidelines unrelated to bronchiolitis.

Bronchiolitis is the most common cause of hospitalisation of very young children.[1] Although the mortality associated with bronchiolitis is low in affluent countries, the related cost and morbidity are high[2] especially in some minority groups such as Indigenous children.[3] Despite the burden of illness, there is a relative paucity of evidence-based guidelines on the management of bronchiolitis in- and out- of hospitals. Prior to the updated bronchiolitis guideline from the American Academy of Pediatrics (AAP),[1] the latest most comprehensive collation of evidence for the management of bronchiolitis was that from the Scottish Intercollegiate Guidelines Network (SIGN) guideline from the United Kingdom,[2] where the latest search date was 2005. Thus, the updated AAP bronchiolitis guideline,[1] which has incorporated relevant data from the last 10 years, is a document that should be welcomed by clinicians worldwide.

What are the changes?

There are many new and clinically important changes in the updated guideline;[1] only four (#1, 7, 8, 11) of the 14 recommendations have minimal or no changes from the 2006 guideline.[4] The rest of the recommendations are new or amended, reflecting the evidence obtained from newer studies. Statements referring to the use of ribavirin and complementary/alternative medicines, present in the previous guideline,[4] have been omitted in the updated guideline.[1] All but four (#6, 9, 12b and 14) recommendations have 'B' rated evidence (studies with minor limitations; consistent findings from multiple observational studies) or higher.[1] The most important cost-saving change is arguably the recommendation (#10a) against the use of palivizumab prophylaxis for all healthy children born prematurely (≥29 weeks gestation).[1,5] Not surprisingly, this was followed by 'big pharma' remonstration (<http://bigstory.ap.org/article/virus-drugmaker-fights-pediatricians-new-advice>).

Other important changes in the updated guideline[1] include: when to consider the use of hypertonic saline (#4); the definitive statement not to use short acting beta$_2$ agonists (#2) or epinephrine (#3) and; the alternate use of nasogastric fluids to intravenous fluids (#9). The technical report is currently in preparation[1] will contain further information not reflected in the recommendations, such as data relating to nasal suctioning and the use of high flow nasal and home therapy oxygen.

Like the 2006 AAP bronchiolitis guideline,[4] important dissimilarities between the updated 2014 guideline[1] and SIGN guideline[2] are: when supplementary oxygen should be considered (AAP: SpO_2 <90%;[1,4] SIGN: SpO_2 ≤92%[2]), the use of continuous SpO_2 monitoring (AAP: not routinely recommended;[1,4] SIGN: recommended for 8-12 hours post cessation of O_2 [2]); and virology testing (AAP: recommends "laboratory testing should not be obtained";[1,4] SIGN: rapid virological testing recommended for cohorting children[2]).

Why use guidelines?

Why should clinicians take note of, or use, clinical practice guidelines? The previous AAP bronchiolitis guideline[4] has been credited with a significant reduction in the use of diagnostic and therapeutic resources[6] in the USA, although variation in bronchiolitis management persists even after almost 8 years of implementation.[7] High quality and well-implemented guidelines can reduce variance in clinical care, reduce cost[6] and most importantly, improve clinical outcomes.[8] However the quality of guidelines are highly variable,[8] including those endorsed by academic societies,[9] and perhaps unsurprisingly so, guidelines are not universally popular. Furthermore, poorly developed guidelines, such as those overseen by panel members with close relationships with 'big pharma', propagate discontent about guidelines[9] and create management dilemmas for doctors and possibly be harmful to patients.[8,9] Good clinical

guidelines are transparent, derived from a rigorous process, externally reviewed and disseminate "the most scientifically sound healthcare practice"[8] undertaken by a multidisciplinary panel whose members are free of financial conflicts.[8,10] The updated AAP guideline[1] has a multidisciplinary panel (including a methodologist, parent/consumer, family physician, neonatologist, general pediatricians, pediatric pulmonologists, pediatric hospitalists, emergency physicians, intensivist and infectious disease physicians) that has no financial ties to pharmaceutical companies and underwent an extensive peer review process (including review by American Academy of Family Physicians, the American College of Chest Physicians, the American Thoracic Society, and the American College of Emergency Physicians). The panel of the updated AAP guideline[1] thus responds to the eight items of guideline panel review outlined by Lenzer and colleagues.[8]

The future

The updated guideline[1] lists ideas for future research, highlighting the incompleteness of the guideline that relates to insufficient existing data. Other important clinical questions include: issues reflecting the differences in the AAP[1,4] and the SIGN guidelines[2] described above; the diagnosis and management of possible co-existence of pneumonia in settings with a high incidence of pneumonia related deaths; post-discharge monitoring particularly for at-risk children and; post-bronchiolitis syndrome and its management.[11]

Guidelines should never represent 'cookbook medicine' and are not a substitute for individualised high quality clinical care as individuals, families and settings are heterogenous, necessitating individualised nuances and deviations in selected circumstances. However, when implemented well, the contribution of untainted high quality guidelines to improved clinical outcomes is undisputed.[8,10] The field of guideline development and implementation

has undergone substantial changes[10] since defined in the 1990s as "systematically developed statements to assist practitioner and patient decisions about appropriate healthcare for specific clinical circumstances".[12] The high standard of the 2014 AAP guideline is important in our current era and advances the field of guidelines and the management of bronchiolitis as described above. It is thus highly likely that the updated guideline[1] along with its accompanying technical report and that on the guidance for the use of palivizumab[5] will be welcomed by clinicians worldwide. The value of the guideline in improving clinical outcomes and use of resources is now dependent on its implementation.

References

1 Ralston S, Lieberthal AS, et al. Clinical Practice Guideline: The Diagnosis and Management of Bronchiolitis. Pediatrics 2014; in press.

2 SIGN. Bronchiolitis in children. http://www sign ac uk/pdf/sign91 pdf 2006.

3 Chang AB, Brown N, Toombs M et al. Lung disease in indigenous children. Paediatr Respir Rev 2014; May 16, epub ahead.

4 Subcommittee on Diagnosis and Management of Bronchiolitis. Diagnosis and Management of Bronchiolitis. Pediatrics 2006; 118(4):1774-1793.

5 Updated guidance for palivizumab prophylaxis among infants and young children at increased risk of hospitalization for respiratory syncytial virus infection. Pediatrics 2014; 134(2):415-420.

6 Parikh K, Hall M, Teach SJ. Bronchiolitis management before and after the AAP guidelines. Pediatrics 2014; 133(1):e1-e7.

7 Florin TA, Byczkowski T, Ruddy RM et al. Variation in the Management of Infants Hospitalized for Bronchiolitis Persists after the 2006 American Academy of Pediatrics Bronchiolitis Guidelines. J Pediatr 2014; Jul 8, epub ahead.

8 Lenzer J, Hoffman JR, Furberg CD et al. Ensuring the integrity of clinical practice guidelines: a tool for protecting patients. BMJ 2013; 347:f5535.

9 Lenzer J. Why we can't trust clinical guidelines. BMJ 2013; 346:f3830.

10 Woolf S, Schunemann HJ, Eccles MP et al. Developing clinical practice guidelines: types of evidence and outcomes; values and economics, synthesis, grading, and presentation and deriving recommendations. Implement Sci 2012; 7:61.

11 McCallum GB, Morris PS, Chang AB. Antibiotics for persistent cough or wheeze following acute bronchiolitis in children. Cochrane Database Syst Rev 2012; 12:CD009834.

12 Field MJ, Lohr KN, (eds). Clinical Practice Guidelines: Directions for a New Program. Institute of Medicine, Washington, DC: National Academy Press 1990.