

CAHE JC Critically Appraised Article Summary

Journal Club Details

Date of submission	June 2008
Journal Club location	Lyell McEwin Hospital
JC Facilitator	Cassie Sealby

Clinical Scenario

What is the effectiveness of chest physical therapy in the clinical resolution of children with pneumonia?

Review Question/PICO/PACO

P: Children aged 0-5 with pneumonia

I: Chest physiotherapy plus standard treatment for pneumonia

C: Standard treatment alone

O: LOS, chest x-ray findings, morbidity

Article/Paper

Chest physical therapy for children hospitalized with acute pneumonia: a randomised controlled trial

Paludo C, Zhang L, Lincho CS, et al. *Thorax online* 2008; 1-10.

Article Methodology: Randomised controlled trial

Returned JC on: 4 June 2008

By CAHE staff member: Lucylynn Lizarondo

research
Centre for Allied Health Evidence
news



University of
South Australia

CAHE

Centre for Allied
Health Evidence

a collaborating centre of



THE JOANNA BRIGGS INSTITUTE

The Centre for Allied Health Evidence (CAHE)

Tel 08 8302 2769 Fax 08 8302 2766 Email karen.grimmer-somers@unisa.edu.au
University of South Australia GPO Box 2471 Adelaide SA 5001 Australia
To receive CAHE updates register online at www.unisa.edu.au/cahe



Ques No.	Yes	Can't Tell	No	Comments
1	✓			<p>Population: Hospitalised children aged 29 days to 12 years old diagnosed with acute pneumonia</p> <p>Intervention: chest physical therapy (postural drainage, thoracic squeezing, chest percussion, vibration, cough stimulation and aspiration of secretions if necessary) bid plus standard treatment (antibiotic therapy, fluid therapy, and oxygen therapy if needed) for pneumonia</p> <p>Outcomes: Primary outcome measure is time to clinical resolution (number of days needed for patient to present with the following parameters: afebrile, absence of signs of severity, normal respiratory rate, and arterial oxygen saturation equal to or higher than 95%). Secondary outcomes were length of hospital stay, persistence of respiratory symptoms and signs</p>
2	✓			<p>This study is a randomised controlled trial which is just appropriate to be so, in order to determine whether or not the observed effects can be attributed to the intervention being tested.</p> <p>Is it worth continuing: YES</p>
3	✓			<p>The participants were allocated to the intervention and control groups by simple method of randomisation performed from a table of random numbers.</p> <p>The trial reported that there were no significant differences between the two groups in terms of baseline characteristics (age, gender, birth weight, gestational age, history of maternal smoking, respiratory symptoms and signs, chest x-ray findings, arterial oxygen saturation, antibiotic therapy).</p>
4	✓			<p>All attending paediatricians who administered the standard treatment were blinded to group assignment, as well as the investigators and nurses who did the assessment. Participant blinding in this case is not very critical as all the outcomes were measured objectively by blinded assessors.</p>
5	✓			<p>The trial reported that analyses were based on the intention-to-treat principle, which means that all patients randomly assigned to either group were analysed together, regardless of whether or not they completed or received the treatment.</p>
6	✓			<p>Data on the different outcomes were measured and collected in the same way for all the participants.</p>
7	✓			<p>A power calculation was done, so that to detect a clinically-relevant reduction of one day in the time to clinical resolution, 47 participants in each group were required.</p>



Ques No.	Yes	Can't Tell	No	Comments
8				<p>Results comparing clinical resolution between the intervention and control groups using median values were presented. Findings have shown that intervention group had longer median duration of coughing and rhonchi in auscultation than the control group. In addition, there were no significant differences between the two groups in terms of other parameters of clinical evolution.</p> <p>Bottom line results: Chest physical therapy as adjunct to standard treatment does not hasten clinical resolution of hospitalized children with acute pneumonia and may even prolong duration of coughing and rhonchi. Persistence of these symptoms however do not necessarily represent unfavourable clinical outcome.</p>
9				Results for all outcomes were presented in terms of statistical significance at $p < 0.05$.
10	✓			<p>Comments were provided by the authors in the discussion section regarding the use of "time to clinical resolution" as their primary outcome measure. The argument that this variable reflects the severity and evolution of pneumonia and hence reliable and objective, seems reasonable.</p> <p>The results of the study appear to be applicable to the local setting and generalisability is likely to be high.</p>