

Title

Chest physiotherapy for acute wheezing: an inappropriate protocol in a misdiagnosed group of patients

Running head

Chest physiotherapy and acute wheezing

Authors

Vilaro, J¹. Torres-Castro, R². Postiaux, G³.

¹Health Sciences Faculty Blanquerna, Physiotherapy Research Group (GReFis), Ramon Llull University. Barcelona, Spain; ²School of Physiotherapy, Medicine Faculty. University of Chile. Santiago, Chile; ³Grouped'Etude Pluridisciplinaire Stéthacoustique, Grand Hôpital de Charleroi, Service des Soins Intensifs Site Notre-Dame et Laboratoire de stéthacoustique appliquée. Charleroi, Belgium.

Corresponding author:

Jordi Vilaro

Health Sciences Faculty Blanquerna, Physiotherapy Research Group (GReFis).

Ramon Llull University.

c. Padilla, 326-332

08025 Barcelona

Spain

Tel. 93 253 32 56

Fax 93 253 30 85

Email: jordivc@blanquerna.url.edu

In a recent article in *Acta Paediatrica*, Castro-Rodriguez et al(1) evaluated the effectiveness of chest physiotherapy in wheezing infants. First of all, the authors provided a poor description of the disease. Acute wheezing episodes are symptoms of a wide range of respiratory diseases, such as asthma or atopy, some of which are not likely to be treated with physical interventions. The authors evaluated three techniques - slow and long expiratory flow and assisted cough – all used to increase mucus transportation and expectoration. Wheezing symptoms are related to bronchial oedema and bronchospasm and evidence shows that they must be treated with corticoids and bronchodilators, using an adequate delivery system, before any other treatment, mostly in children(2). Furthermore, if the intention of the authors was to treat an acute episode of bronchiolitis, which produces a bronchial obstruction due to multifactorial features, the study that has shown positive effects used a protocol combining prolonged slow expiration preceded by hypertonic saline nebulisation(3). This procedure initially aims to reduce oedema to facilitate the clearance of secretions.

Castro-Rodriguez et al methodologically calculated a sample of 32 subjects for each group, but they only recruited 23 and 25 per group and list this as a limitation. Considering that there was not a significant difference between the groups, and that the results showed a clear tendency in favour of chest physiotherapy, with clinical scores of 2.8 for patients who received chest physiotherapy and 3.4 for those who did not, we hypothesise that the difference might have been significant if the sample had achieved 32 subjects. A post-hoc subgroup analysis that grouped patients according to their wheezing history could have shown positive effects in chest physiotherapy. Another aspect is the degree of concordance between the physiotherapists who applied the techniques and the doctors that performed the assessments, as the training level of each professional is an important factor and could interfere with the results. Concordance was not evaluated in the study being discussed.

Finally, it is known that chest physiotherapy produces post-treatment effects for up to 24 hours(3). For this reason, it is surprising that the authors expect good results with only one session lasting an hour. There are important questions that must be asked, such as what happened between the second hour and the seventh day or the 28th day? Did all the patients follow the appropriate treatment during this period? Did they only have an isolated therapeutic session?

To summarise, the study tries to evaluate an inappropriate protocol in a misdiagnosed group of patients. This could lead to a misinterpretation of the results, by introducing an important bias that implies wrong conclusions.

Bibliography

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