Chest physiotherapy for children with acute bronchiolitis: Do we need more evidence?

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To the editor:
We read with interest the study entitled: “Ambulatory chest physiotherapy in mild-to-moderate acute bronchiolitis in children under two years of age — A randomized control trial”.

In this randomized controlled trial, Ramos-Pinto et al. reported that a 2-week chest physiotherapy (CP) intervention reduced the clinical severity at day 15 of children with acute viral bronchiolitis. The authors concluded that CP had a positive

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impact on these children’s respiratory status. Although the authors should be acknowledged for their work, the methods, results and subsequently the conclusions of this study raise important questions.

First, the authors could clarify why as they stated: “this study was conducted from December to March of 2011 and 2012”, while the study was submitted in January 2021 which represent a gap of more than 10 years between the first inclusion and the time at which it is proposed for peer review. Similarly, although this study was registered on clinicaltrials.gov (NCT04260919), the protocol was first posted in February 2020. Hence, this protocol registration does not rule out the occurrence of protocol deviations at the time of children inclusions. Thus, one can only have a very modest confidence in the main result, since the main criterion chosen by the authors could very well have been decided a posteriori, i.e., after having performed the statistical analysis.

Second, it is of particular concern that “the control group was assessed by the physiotherapist responsible for the study and the intervention group was assessed by a physician”. Even though the inter-rater reliability of the respiratory score employed was previously established by the same authors, it is obvious that the assessment of the clinical severity was highly subjective and performed by different investigators that were fully aware of each children’s allocation.2 Consciously or not, the physiotherapist rating the clinical severity of the children from the control group was likely to overrate it for children he knew were not assigned to any CP intervention. The positive effects for the CP intervention could thereby have been artificially created by these measurement errors.

Finally, the clinical significance of the present findings should be questioned. Bronchiolitis is a self-limiting condition, and the median duration of the respiratory symptoms is thought to be two weeks.3 Under these conditions, providing a relief in respiratory symptoms at day 15 is highly questionable in a clinical perspective, especially if it requires an 8-sessions CP intervention. Moreover, the clinical difference between ratings of 0.3 and 1.2 out of 10 points on the respiratory score is likely to be meaningless since all the children were in excellent general condition at the time of this assessment.

Despite a significant statistical difference observed between intervention and control groups, this study strengthens the idea that the clinical benefit of untargeted and unrecommended interventions is likely to be trivial for these children.4 Physiotherapists have a particularly important role in clinical monitoring and parental education, which may be more than enough to justify the physiotherapy management, without resorting to repeated unnecessary interventions.

Conflict of Interest

Dr. Combret, Dr. Prieur and Dr. Medrinal performed consultations for Air Liquide Medical Systems, outside the submitted work. Dr. Lebret reported to have received personal fees from Air Liquid Medical Systems and non-financial support from NOMICS over the past three years, and is a part-time employee of Air Liquide Medical System (Med2lab).

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