primary studies - published RCT

Short-term effects of positive expiratory pressure mask on ventilation inhomogeneity in children with cystic fibrosis: A randomized, sham-controlled crossover study.

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Study design (if review, criteria of inclusion for studies)

Randomized, sham-controlled crossover trial

Participants

Children with cystic fibrosis

Interventions

Positive expiratory pressure (PEP) mask.

Outcome measures

Authors used the nitrogen multiple-breath washout (N(2) MBW) test to measure diffusion-convection-dependent inhomogeneity arising within the intracinar compartment (S(acin) *VT). Two N(2) MBW tests were performed near the hospital discharge date: one before and the other after PEP mask therapy (1â€‰min of breathing through a flow-dependent PEP device attached to a face mask, followed by three huffs and one cough repeated 10 times) by either a standard (10-15â€‰cmH(2) 0) or a sham (

Main results

The study sample was 19 cwCF (ten girls), aged 11.4 (2.7) years. The adjusted S(acin) *VT mean difference between the standard and the sham procedure was -0.015 (90% confidence interval [CI]: -âˆž to 0.025)â€‰L(-1) . There was no statistically significant difference in S(cond) *VT and lung clearance index between the two procedures: -0.005 (95% CI: -0.019 to 0.01)â€‰L(-1) and 0.49 (95% CI: -0.05 to 1.03) turnovers, respectively.

Authors' conclusions

Findings do not support evidence for an immediate effect of PEP mask physiotherapy on S(acin) *VT with pressure range 10-15 cmH(2) 0. Measurement with the N(2) MBW and the crossover design were found to be time-consuming and unsuitable for a short-term study of airway clearance techniques.

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See also

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Keywords

non pharmacological intervention - devices OR physiotherapy; Airway clearance technique; Airway clearance drugs -expectorants-mucolytic- mucociliary-; Chest physiotherapy; Positive-Pressure Respiration- PEP- pep mask; Active Cycle of Breathing Technique -ACBT-; forced expiration technique; High Frequency Chest Wall Oscillation -HFCWO-; VEST Airway Clearance System; oscillating devices; Acapella; flutter; Intrapulmonary Percussive Ventilation; Vibration; exercise; Autogenic drainage;