primary studies - published RCT

Physiologic evidence for high-frequency chest wall oscillation and positive expiratory pressure breathing in hospitalized subjects with cystic fibrosis.

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

RCT

Participants

Participants were admitted to hospital for acute exacerbation. All participants performed HFCWO 1 - 3 times daily as outpatients before admission, but none had performed PEP. 15 participants, 8 males, 7 females. Aged at least 7 years, mean (SD) age 17.5 (4.2) years.

Interventions

Treatment lasted 30 minutes. PEP versus HFCWO. Both treatments were alternated within 48 hours of hospital admission and then reversed prior to discharge.

Outcome measures

RFTs and SaO2 measured before and after every intervention. Each intervention was only done twice i.e. day 1 or 2 following admission then day -1 or -2 prior to discharge.

Main results

At admission and discharge, PEP breathing increased SpO2 during treatment, whereas HFCWO decreased SpO2 during treatment. Ventilation distribution, gas mixing, and lung function improved after HFCWO or PEP breathing.

Authors' conclusions

High-frequency chest wall oscillation and PEP breathing are similarly efficacious in improving ventilation distribution, gas mixing, and pulmonary function in hospitalized people with CF. Because SpO2 decreases during HFCWO, people who have moderate to severe CF and who use HFCWO should have SpO2 monitored during an acute exacerbation.

http://www.mrw.interscience.wiley.com/cochrane/clcentral/articles/068/CN-00691068/frame.html

See also

Physical Therapy YR: 2005 VL: 85 DE: RCT NO: 12

Keywords

non pharmacological intervention - devices OR physiotherapy; Airway clearance technique; Exacerbation; Respiratory Tract Infections; Respiratory Tract Diseases; Infection; Bacterial Infections; Positive-Pressure Respiration- PEP- pep mask; High Frequency Chest Wall Oscillation -HFCWO-; VEST Airway Clearance System; oscillating devices; Chest physiotherapy;