primary studies - published RCT

Pulmonary function and sputum production in patients with cystic fibrosis: a pilot study comparing the PercussiveTech HF device and standard chest physiotherapy.

Code: PM15078765 **Year:** 2004 **Date:** 2004 **Author:** Marks JH

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

Randomized crossover. University-affiliated, community-based CF center.

Participants

10 clinically stable patients with CF (age range, 10 to 21 years; mean age, 15.3 years) with Shwachman scores from 55 to 95 (mean 75).

Interventions

Two treatment regimens were used: 2.5 mg of albuterol delivered via updraft nebulizer followed by standard CPT, and 2.5 mg of albuterol delivered via the PTHF device without CPT.

Outcome measures

Outcome measures included pulmonary function test (PFT) results 4h after treatment and quantitative sputum production during the 4 h after treatment. Pulse oximetry was performed during treatment. A patient satisfaction questionnaire was administered at the end of the study.

Main results

No PFT parameters were significantly changed 4 h after CPT or PTHF, although there was a trend to decreasing residual volume after both treatments. There was a trend for more sputum production after PTHF compared to CPT, but this did not reach statistical significance. There were no episodes of hemoglobin-oxygen desaturation during or after either treatment. One patient had minor hemoptysis after CPT. No adverse effects occurred after PTHF. Eight patients found the PTHF device easy to use, and six patients would prefer the PTHF device to CPT.

Authors' conclusions

The PTHF device appears to be a safe and effective method of airway clearance in CF patients in this small pilot study.

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See also

Chest. 2004 Apr;125(4):1507-11.

Keywords

Adolescent; Adult; Airway clearance technique; Child; Inhalation OR nebulised; non pharmacological intervention - devices OR physiotherapy; Percussion; pharmacological_intervention; Ventilators- Mechanical; Adrenergic beta-Agonists; Respiratory System Agents; Chest physiotherapy; Artificial Ventilation;