primary studies - published RCT

Prognosis in cystic fibrosis treated with continuous flucloxacillin from the neonatal period.

Code: PM8129449 **Year:** 1994 **Date:** 1998 **Author:** Weaver LT

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

Prospective randomized trial. Pediatric pulmonary division of a tertiary care center.

Participants

14 outpatients with stable CF recruited from the CF center.

Interventions

Two modes of oral airway oscillation (1: frequency 8 Hz; inspiratory to expiratory [I:E] ratio 9:1; 2: frequency 14 Hz; I:E ratio 8:1), two modes of chest wall oscillation (1: frequency 3 Hz; I:E ratio 4:1; 2: frequency 16 Hz; I:E ratio 1:1, alternating with frequency 1.5 Hz, I:E ratio 6:1), and CPT (clapping, vibration, postural drainage, and encouraged coughing) were applied during the first 20 min of 4 consecutive hours.

Outcome measures

Sputum was collected on an hourly basis for a total of 6 consecutive hours. During the first and the last hour, patients collected sputum without having any treatment and underwent pulmonary function tests (PFTs). Oxygen saturation was measured at 30-min intervals during hours 1 to 6. For the first 20 min of the second to the fifth hour, patients received one of the treatments. To assess the effect of the intervention, the weight of expectorated sputum during hours 2 to 6 was averaged and expressed as percentage of the weight expectorated during the first hour (baseline). For the five treatment modalities, mean sputum dry and wet weights ranged between 122% and 185% of baseline.

Main results

There was no statistically significant difference among the treatment modalities. As measured by sputum wet weight, all oscillatory devices tended to be less effective than CPT (p=0.15). As measured by dry weight, oral airway oscillation at 8 Hz with an I:E ratio of 9:1 and CPT tended to be more effective than the other treatment modalities (p=0.57). None of the treatment modalities had an effect on PFTs and oxygen saturation and all were well tolerated.

Authors' conclusions

In outpatients with stable CF, high-frequency oscillation applied via the airway opening or via the chest wall and CPT have comparable augmenting effects on expectorated sputum weight without changing PFTs or oxygen saturation. In contrast to CPT, high-frequency oral airway and chest wall oscillations are self-administered, thereby containing health-care expenses.

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See also

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Keywords

Adolescent; Adult; Airway clearance technique; Child; Drainage; High Frequency Chest Wall Oscillation -HFCWO-; non pharmacological intervention - devices OR physiotherapy; Oral; pharmacological_intervention; Postural Drainage; clapping; Chest physiotherapy; VEST Airway Clearance System; oscillating devices;