primary studies - published RCT

Sputum rheology changes in cystic fibrosis lung disease following two different types of physiotherapy: flutter vs autogenic drainage.

Code: PM9674466 **Year:** 1998 **Date:** 1998 **Author:** App EM

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

Multicentre German study. Random allocation. No blinding of participants or researchers. RCT cross-over design. ITT not discussed. 3 drop outs reported, 14 participants analysed (7 in each treatment intervention group).

Participants

3 drop outs reported (1 for time reasons and the other 2 for acute chest exacerbation), therefore 14 (6 male, 8 female) analysed (7 in each treatment group). Age range 4 - 41 years, mean (SD) 19.6 (10.3) years. Participants had a positive diagnosis of CF by means of sweat test or clinical history or both. 17 participants initially randomised.

Interventions

Flutter versus AD twice daily for 4 weeks. Prior to each therapy interval, for a 1-week wash-out period, no PT was administered, but patients continued regular medication.

Outcome measures

At the beginning and end of each 4-week interval, pulmonary function was measured before and after an acute 30-min therapy. At the end of the PT session, sputum was collected, weighed, and deep frozen until analyzed. The viscoelasticity of the sputum was evaluated using a magnetic microrheometer.

Main results

No significant changes were noted for FVC, FEV1, or sputum volume throughout the study. Sputum viscoelasticity (rigidity index), however, was significantly lower (p

Authors' conclusions

These findings suggest that applied oscillations are capable of decreasing mucus viscoelasticity within the airways at frequencies and amplitudes achievable with the Flutter device, and provide direct evidence that PT can reduce the viscoelasticity of sputum.

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See also

Chest. 1998 Jul;114(1):171-7.

Keywords

Adult; Airway clearance technique; Drainage; flutter; Humidity; non pharmacological intervention - devices OR physiotherapy; pharmacological_intervention; Airway clearance drugs -expectorants- mucolytic- mucociliary-; oscillating devices; Chest physiotherapy; Autogenic drainage;